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Supporting Manufacturing in the Heart of the South West

WORKSHOP BRIEFING

for the

The Employment and Skills Partnership and the

Heart of the South West Local Enterprise Partnership

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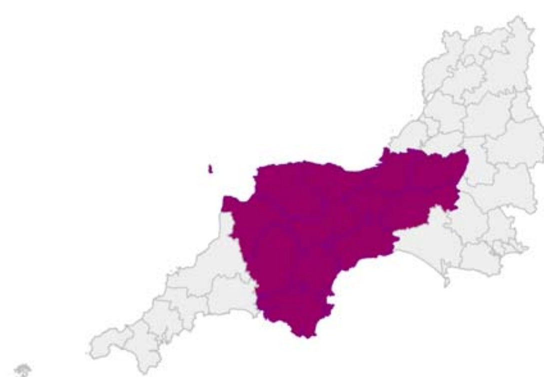

European Union
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SOUTH WEST OBSERVATORY
SKILLS AND LEARNING

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1. BACKGROUND

This briefing paper has been written at the request of the Heart of the South West Local Enterprise Partnership (HoSW LEP) and the South West Employment and Skills Partnership (SWESP). Its purpose is to inform a discussion about how the partners who make up the LEP can support manufacturing in Devon and Somerset. This discussion will start with a workshop on 14 November. Organised by the HoSW LEP, the SWESP, Engineering Employers Federation and Semta Sector Skills Councils (SSC), the workshop will focus on identifying and responding to employment and skills challenges facing the industry. This paper explores these issues and is provided as a briefing in advance of the event.

1.1 Local enterprise partnerships

Local Enterprise Partnerships (LEPs) have been created by the Coalition Government *'to provide the clear vision and strategic leadership to drive sustainable private sector-led growth and job creation in their area*.'[1]

Unlike Regional Development Agencies (RDAs), LEPs do not control, and cannot directly access, significant 'pots' of government funding. They are, instead, a forum for bringing the public and private sector together to agree on priorities for growth and how these will be achieved. Theirs is a largely moral authority: a duty to promote collaboration and to ensure that public sector bodies, particularly those with representation on the board, focus their actions and resources on agreed goals. Organisations represented on the board include the four Local Authorities within the area, alongside representatives of Higher Education (HE), Further Education (FE) and business support agencies (see Annex 1).

Although LEPs may not have much in the way of resource at their immediate disposal, they do have an important role in accessing funds for their areas. In the absence of RDAs, the Government has established a number of 'challenge funds', targeted on areas that make the most convincing case for investment. Developing a case and driving this forward through the LEP may be essential for manufacturers or others seeking funding for growth-related initiatives in their sector.

It is important, however, that expectations are realistic. The volume of funding available for economic development has fallen significantly since the closure of RDAs and, as recent experience shows[2], challenge funding can be hard to obtain. In the current fiscal climate, discussions with and within LEPs will need to focus as much on achieving more with the resources that partners already bring to the table as on attracting new funds to the area. A dual focus is required; and it makes sense for this to be sharpened through the vision LEPs can provide. For, if Government, driven by concerns about the 'flat-lining' economy or mindful

[1] Local Growth White Paper, HM Government, October 2010, p. 13.
[2] HoSW LEP was recently unsuccessful in two bids to establish Enterprise Zones in Devon & Somerset.

of upcoming elections, decides to make resources available, they are likely to give their brainchild, the LEPs, a role in deciding how these are spent[3].

1.2 Heart of the South West LEP

On 31 March 2011, ministers approved the creation of the Heart of the South West (HoSW) LEP, covering the county/unitary authority areas of Plymouth, Torbay, Devon and Somerset.

Approval was given on the basis of a prospectus[4] which stated the LEP's over-arching objective as being to *'create new jobs, raise productivity levels and increase our* average *wages'*.

'*Ensuring that the workforce is equipped with the skills that businesses need'* was also identified as essential to attaining these overall goals.

The LEP prospectus did not name manufacturing as a priority *per se*, but identified:

- the existence of *'prevailing sectors'* within the area, such as *'agriculture, tourism, marine, defence, aerospace, advanced engineering and low carbon energy generation'*;
- that the area is host to 'i*nternationally recognised manufacturing businesses such as Agusta Westland, Honeywell Aerospace, Babcock Marine and Princess Yachts, as well as award-winning SMEs such as Diamedica (UK) Ltd, SupaCat and the Ariel Motor Company*'; and
- that there is a need to build *'on our many existing strengths in research development and manufacturing in key business sectors such as marine, aerospace and photonics*'.

It is interesting to note that the LEP is not just concerned about growing the volume of jobs. It clearly emphasises the importance of growing jobs in high productivity, knowledge-intensive industries, through priorities[5] such as:

- *Attracting inward private sector investment from high growth sectors to encourage higher paid quality jobs*.
- *Encouraging increased levels of indigenous investment to improve the quality and pay levels of existing jobs*.

A full list of the HoSW LEP's objectives is given in Annex 2.

[3] RDAs started small but grew over time as they became the vehicle through which more and more initiatives poured. Although the Government is clear that it does not wish LEPs to become funding bodies in their own right, a similar principle may apply.
[4] Available from: http://www.swslim.org.uk/Downloads/local/leps/hotsw-submission.pdf
[5] A full list of the LEP's priorities, which include extending access to superfast broadband, improvements to infrastructure, enterprise development and export support, is provided at Annex 2.

Since it came into existence in June 2011, the LEP Board has been working with partners to identify actions that it can take to achieve these objectives. The workshop on 14 November 2011 is part of this process, instigated from a recognition that high-tech manufacturing has an important role to play in achieving the productivity-led growth that the LEP aspires to.

1.3 Why manufacturing?

It is not entirely uncommon to hear people ask '*how can an economy survive it if doesn't actually make anything?*' This statement has a common sense logic and appeal. However, in reality, it would be possible to have an entirely viable economy made up of researchers who invent things, lawyers who patent them, bankers who finance them, market researchers, designers and advertisers who make them attractive to consumers, brokers who insure their delivery and so on. As Evan Davis pointed out in the recent TV series, *Made in Britain*, the Chinese manufacturer of iphones receives $5 for each phone they produce, while the Californian parent company receives $80.

This somewhat theoretical perspective is not to argue that Britain, or the Heart of the South West, would not benefit from being host to a vibrant manufacturing sector. Recent economic history points to the considerable merits of a well balanced economy. In 2009, manufacturing remained the UK's third largest sector, contributing £140 billion in gross value added and just over 11% of the economic output. It employs over 2.5 million people or around 8% of the UK workforce, large numbers of whom work in highly skilled, well-paid jobs[6]. Manufacturing, particularly advanced manufacturing, is highly-productive and well worth both supporting and growing. As manufacturers, that is taken as read. The point of the previous paragraph is that it draws attention to a) the huge range of activities that are linked to the manufacturing process[7] and b) the wide range of public policy interventions – from pure to applied research, design and marketing skills, to infrastructure development – that manufacturers may view as essential to their industry.

[6] Average annual earnings, from the Annual Survey of Hours and Earnings (2010):

Engineering Professionals	£36,204
Science Professionals	£35,658
Health Associate Professionals	£30,202
Science And Engineering Technicians	£26,352
All Occupations	£25,879

[7] The question of how one defines 'manufacturing', distinguishing it from other activities that support getting the manufactured products to market, is also worth mentioning. In statistical terms, the question is answered for us, through the industrial classification process. This is based on asking employers about the primary purpose of their enterprise. Those that answer 'manufacturing' are manufacturers, regardless of how much research, industrial design, production, transportation or marketing they may or may not have kept in house. This may appear an obscure point, but it is worth raising, because trends in outsourcing may have a significant bearing on manufacturing-related statistics.

2. MANUFACTURING IN THE HOSW LEP AREA

This section provides a brief overview of recent trends in the manufacturing sector. It is a synopsis of a more detailed analysis, which can be found in Annex 3.

Over a period of just 20 years, manufacturing's contribution to UK Gross Domestic Product (GDP) has fallen steadily, from 22% in 1989 to just over 11% in 2009. This trend has been more pronounced in the UK than in other leading industrialised nations due to: production moving overseas to low wage competitors; falling prices relative to services; and the outsourcing of many support activities such as logistics, distribution and security.

Despite this decline, the sector remains a vitally important one, particularly in the HoSW LEP area, where it accounts for a higher than average share of both employment and GVA (Gross Value Added).

The latest data suggests that the sector employs 67,200 people in the HoSW LEP area (10.2% of the total, compared with 8.8% nationally) and contributes around £3.1 billion to the local economy (12.8% of the total, compared with just over 11% nationally).

Across the LEP, 4.2% of manufacturing employment was in high-technology sectors[8], a relatively low concentration compared with the regional (6.4%) and national (5.3%) averages. However, there is a relatively high concentration of employment 'medium high-tech' employment locally (33.8%) compared with that seen regionally (30%) and nationally (28.4%).

Given that higher-technology manufacturing activities tend to be more productive than lower-tech ones, and that the HoSW LEP area has lower than average employment in these high-tech sectors, it is perhaps unsurprising that the average productivity of manufacturing across it (£40,200 per full-time equivalent employee in 2009) is below the national average (£53,100).

[8] Definitions of manufacturing sub-sectors, based on SIC 2007 classifications

High-tech manufacturing Pharmaceuticals Office, accounting and computing machinery Radio, TV and communications equipment Medical, precision and optical instruments	**Medium high-tech manufacturing** Aircraft Motor vehicles and other transport equipment Chemicals (excluding pharmaceuticals) Electrical machinery and equipment
Medium low-tech manufacturing Ship building / repair Printing Rubber and plastics Coke, refined petroleum products and nuclear fuel Basic metals and fabricated metal products Other non-metallic mineral products	**Low-tech manufacturing** Wood, pulp and paper products, Printing Recycling Food products, beverages and tobacco Textiles and clothing

The occupational structure of manufacturing locally also seems to reflect the concentration of medium-high technology employment, with a higher than average level of employment in the skilled trades, and a slightly lower proportion in higher-level occupations.

The occupational structure of the sector has also changed over time, as the sector has retracted. Job losses have been fastest in lower and unskilled jobs, creating a shift towards higher level, more knowledge-intensive employment.

This change is also reflected in the qualifications held by the manufacturing workforce, with an increasing proportion holding higher-level qualifications over the last five years. However, the manufacturing sector still has a much lower proportion of its workforce qualified at Level 4 and above, compared with the economy as a whole. It also has a higher than average proportion of people with the lowest levels of qualification or with none at all.

2.1 Skills shortages and gaps

At the time of the last National Employer Skills Survey (NESS 2009), which was in the midst of the recession, just 1% of manufacturing employers had at least one unfilled vacancy, compared with 1.7% of all employers. Of those employers with a vacancy, 22% reported this as being 'hard-to-fill' and 18% said that it was hard to fill because applicants lacked the required skills for the job. This was a higher figure than that for all employers, 16% of whom reported having 'skills shortage vacancies', but it also represents a very low proportion of total employment – less than 0.2%.

A more significant finding was the fact that manufacturing employers considered over 200,000 of their employees, or 10% of the national workforce, to have 'skills gaps', i.e. not to be fully proficient in their current job. This is a worrying statistic proportion, particularly when one considers the impact skills gaps can have on a business. These were reported by employers in the Semta SSC footprint, to include: an increase in the workload for others (51% of employers); increased operating costs (37%); difficulties meeting quality standards (24%) and difficulties introducing new working practices (23%). The picture was similar for other manufacturing SSCs[9].

The skills most frequently identified as missing were technical, practical and job-specific skills, though 'generic skills' such as team-working, oral and written communication were also frequently cited.

A perhaps more reassuring finding was that 70% of employers identified that their skills gaps were a result of a lack of experience or that the staff concerned had been recently recruited; which in turn suggests that recruitment, induction and initial vocational training are significant issues for employers and that a focus on providing assistance, through programmes such as Apprenticeships, is appropriate.

[9] The manufacturing SSCs comprise Cogent, SEMTA, Improve Ltd and Proskills.

Despite the extent of skills gaps and the impacts they have, NESS 2009 found that manufacturers had a lower than average expectation that their staff would need to acquire new skills and knowledge over the next 12 months.

Perhaps unsurprisingly, manufacturers' product market strategies were found to have a significant influence here, with 73% of organisations operating a 'very high quality' product market strategy anticipating a need to train, compared with 55% of those operating a 'very low quality' strategy. Again unsurprisingly, 52% of organisations pursuing high quality strategies cited the development of new products and services as a driver for training, compared with only 27% of those pursuing 'low quality strategies'.

It is interesting to note that Managers were identified as the occupational group where the need to upskill was greatest. This apparent deficit is a significant concern as management skills are generally acknowledged to be critical to the success of nearly all enterprises. Indeed, as we have previously argued, there remain situations in some companies where *"cheap labour and a shortage of capital to invest in automation sees workers taking items off one belt and placing them on an adjacent conveyor system all day long*". Training individuals in these roles is unlikely to impact on the profitability, growth or survival of an employer, unless accompanied by a review of *"work organisation, job design, how employment relationships are managed and conditions are achieved whereby employee motivation, commitment*[10]*, and discretionary effort are maximised'*[11]. Clearly, this is a management role, for which training may be critical.

The manufacturing sector has a lower than average propensity to train, with a lower than average proportion of staff trained in the last year, and a lower per capita expenditure on training.

One area where the sector performs well, however, is the provision of Apprenticeships, which are offered by 7.6% of manufacturing employers. The sector as a whole accounts for 13% of all Apprenticeships nationally, while accounting for around 10% of total employment.

2.2 Employment in Manufacturing

The long-term trend in manufacturing employment is similar to that of its share of GVA, in that is has declined almost year on year for the last decade or so. In 2010, manufacturing employment in the HoSW LEP area was just two-thirds of its 1998 level (a similar picture to that seen regionally), representing a loss of around 35,000 jobs. Across England as a whole, the decline has been even more severe, with over 40% of jobs lost in the same period.

Perhaps of most concern, though, is the extent of the decline in high-tech manufacturing (some of the highest value added sub-sectors) in the HoSW LEP area. Between 1998 and

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[10] The European Working Conditions Survey finds that, of 27 EU countries, there are only five in which more workers say their job is 'monotonous and boring' than in the UK. These countries are Estonia, Greece, Bulgaria, Czech Republic and Spain.

[11] Keep, E, Mayhew, K & Payne, J. *From Skills revolution to productivity miracle – not as easy as it sounds?* Oxford Review of Economic Policy, Vol. 22, No. 4, 2006, cited in Neild, B, Training and business survival during recession, SLIM, Nov 2008. Available at http://www.swslim.org.uk/documents/comments/03.12.08_recession.pdf

2010, employment in high-tech manufacturing within the HoSW LEP area declined by almost 80% - a loss of 10,000 jobs.

2.3 Future trends

Looking forward, research by BERR[12] (now BIS) argues that manufacturing will be driven by five major dynamics, the most significant of which will be continued growth in the extent and complexity of **global value chains**. Allied to this, firms will focus on product differentiation and investment in: new **technology**; **intangibles**, such as design, branding and R&D; and in **people and skills**. In addition, the report also identifies new opportunities and challenges as being created by the growth of the **low carbon economy**.

The Government's *Plan for Growth*[13] also points to the sector's dependence *'on its ability to design and make high value products'*, picking up on the increasing cost of testing and implementing new technologies (especially for Small and Medium-sized Enterprises (SMEs)) as an area for potential public sector support.

In terms of the local outlook, forecasts by the South West Economy Module are surprisingly optimistic, suggesting that manufacturing in the Heart of the South West may see 4.8% GVA growth and the creation of around 5,000 new jobs between 2011 and 2012, outperforming the economy as a whole[14]. In the medium term (2011-2016), manufacturing GVA and employment are forecast to grow at a more modest rate, and to lag slightly behind the economy as a whole.

2.4 Future skills requirements

Research by manufacturing SSCs points to a range of factors that are expected to drive future skills requirements within the sector, including the introduction of new technologies, the development of new products and services, and increasingly complex supply chains. The SSCs are fairly unanimous in their assertion that these factors will create an ever-increasing demand for higher-level skills, for engineers, technicians and managers.

The Treasury's Growth Plan highlights a continuing shortfall in the supply of technicians and engineers, a lack of information about specialist help and advice available to firms, negative perceptions about the relevance of Apprenticeships and a poor image of modern manufacturing that can deter young people from pursuing careers in STEM-related[15] occupations.

For more detailed information, please see Annex 3.

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[12] BERR (2008) **Five Dynamics of Change in Global Manufacturing** - Supporting Analysis for 'Manufacturing Strategy: New Challenges, New Opportunities, BERR Economics Paper no. 2, September 2008, http://www.bis.gov.uk/files/file47663.pdf

[13] HM Treasury and BIS (2011) *The Plan for Growth*, March 2011

[14] These projections are dated 'Autumn 2011' but may have been produced earlier in the year, reflecting the optimism around the 'manufacturing led recovery' which has recently been somewhat dented by the European and global economic difficulties.

[15] STEM = Science, Technology, Engineering and Mathematics.

3. MANUFACTURING SUPPORT

It is probably fair to say, with hindsight, that manufacturing was rather neglected at the start of this century. The idea of industrial policy - intervening in the market to promote technological change, capital investment or to protect or grow certain 'strategic' industries – was an anathema to Mrs Thatcher's Conservatives and continued to be left on the sidelines by 'new' Labour. From 1997 to 2007, as the economy grew and financial services boomed, policy focused on growing a knowledge economy[16], supported by aspirations such as giving 50% of young people the experience of HE. Then, in late 2008, came the financial crisis, a rethink and a call for a 'new activism' in industrial policy.

The rationale for this 'new activism' was spelt out in April 2009 in *New Industry, New Jobs*[17], which made the case for supporting the development of a series of high-tech sectors[18] that could play a key role in the economic recovery. It was not and, due to EU State Aid regulations, could not be about protecting domestic businesses or industries from overseas competition. If Dyson[19] or others chose to offshore aspects of their manufacturing process, that was the market at work. The focus of policy was on exploiting the nation's science base, helping companies to turn innovations and new technologies into jobs and on growing high-tech industries. This is where the focus of policy remains.

Since the election, the Coalition Government has repeatedly stressed the need to 'rebalance' the UK economy, towards private sector employment, manufacturing and exports. Its *Plan for Growth*[20] spells out the key reforms that it sees as being required to achieve this.

3.1 Plan for Growth

Plan for Growth sets out four overarching ambitions:

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[16] See, for example, 'Living on Thin Air' (Viking, 1999) by Charles Leadbeater. Described by Peter Mandelson as 'setting out the agenda for the next Blair revolution', it considered, in optimistic terms, the implications of moving to an essentially post industrial, highly fluid and networked knowledge-based economy, such as that seen in Silicon Valley. By contrast *'German industry is held back by its trust in inherited institutions, which sanctions incremental improvements to established bodies of knowledge. It discourages people from taking risks to create entirely new families of products, by exploiting novel ideas'* etc *(Page 166).*

[17] *New Industry, New Jobs*, HM Government, April 2009

[18] These were:

- Low Carbon Industries, (e.g. Low Carbon Buildings, Low Carbon Vehicles, Carbon Capture and Storage, Civil Nuclear, Offshore Wind, Marine Energy)
- The digital economy
- Life sciences and pharmaceuticals
- Advanced manufacturing, particularly
- Aerospace
- Composite materials
- The industrial biotechnology sector
- Plastic electronics
- Engineering construction

[19] Contrast *Dyson, champion of British industry, switches production to far east - Surprise decision to shed 800 jobs angers unions and shocks ministers,* Guardian, 6th February 2002 (http://www.guardian.co.uk/business/2002/feb/06/manufacturing.globalrecession) and *Dyson profits rise on exports and new products… and plans to double its engineering workforce to 700*, BBC, 16th August 2011, (http://www.bbc.co.uk/news/business-14549354)

[20] Plan for Growth accompanied the March 2011 budget. Published by BIS/HM Treasury it is available from http://cdn.hm-treasury.gov.uk/2011budget_growth.pdf

- to create the most competitive tax system in the G20;
- to make the UK one of the best places in Europe to start, finance and grow a business;
- to encourage investment and exports as a route to a more balanced economy; and
- to create a more educated workforce that is the most flexible in Europe.

The measures it describes are broad, ranging from localising choice about the use of previously developed land, to improving consumer information, reductions in bureaucracy and changes in tax relief for investment. See Annex 4 for details.

Usefully, the document also identifies a series of actions that have been specifically designed to support the Advanced Manufacturing sector (note the emphasis on ‘advanced’).

1. To encourage investment in new capital equipment, by extending **capital allowances** for short life assets from four years to eight years[21].

2. The establishment of 24 **University Technical Colleges** (UTCs) by 2014. UTCs are colleges for students aged 14 to 19 which specialise in technical studies. They are sponsored by leading UK companies and universities, providing curricula to match the needs of the local economy and of their sectors, high quality work placements, and access to specialist facilities within University and business partners[22].

3. The creation of a high value manufacturing **Technology and Innovation Centre**[23] (TIC). The overall investment in TICs is planned to be £200m. These are, in effect, the UK’s answer to the German Frauhofer Institutes, focused on bridging the gap between universities and business and allowing businesses to access equipment that would otherwise be out of reach. Applications to establish two additional centres, focused on ‘Cell therapy technology’ and ‘Offshore renewable energy technology’, in which the HoSW LEP has a clear interest, have been submitted. Three further centres will also follow in the short term, focused on three of the ten candidate areas listed in the footnote[24].

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[21] This change to the capital allowances regime will allow businesses, particularly the manufacturing sector, to write off the cost of assets for tax purposes more quickly, where those assets are disposed of within eight years, where previously this had been four.

[22] The most recent UTC, in Aston, will be sponsored by Ashton University, E.ON, National Grid, BT, Cadburys and the Electrical Engineering Federation. It will help to address the shortage of skilled staff in the manufacturing and engineering industry across the region. As well as Aston UTC, the Black Country UTC will open in September this year, with sponsorship from Walsall FE College, the University of Wolverhampton, Siemens, National Grid, and Cogent. These institutions, and the expanded programme of UTCs that the Government announces today, will build on the success of the JCB Academy in Staffordshire, the forerunner of the UTC model.

[23] This is a partnership between 5 Universities and two specialist centres. In the words of their website, it aims to *‘provide an integrated capability and embrace all forms of manufacture using metals and composites, in addition to process manufacturing technologies and bio-processing. The high value manufacturing technology and innovation centre will draw on excellent university research to accelerate the commercialisation of new and emerging manufacturing technologies’.*

[24] Complex Systems, Digital media/creative industries, Future cities, Future internet systems, Photonics, Resource efficiency, Sensor systems, Smart grids and distribution, Space, Transport systems and integration

4. Providing £45M from the Engineering and Physical Sciences Research Council (EPSRC) to create **nine university-based centres for Innovative Manufacturing** by 2012. The aim of these is to *'combine inventive research and business acumen to develop the sorts of innovative ideas taken forward to commercialisation through Technology and Innovation Centres[25]'* A list of these centres, which cover areas such as biological pharmaceuticals, novel composite technologies, and intelligent automation, is provided in Annex 6.

5. £6m to create six five-year **Manufacturing Fellowships**, enabling '*exceptional engineers and technology specialists from business who are able to bridge university and industrial cultures and who have the potential to transform UK research and manufacturing. Each Fellow will lead a £1 million programme of research'*[26].

6. The launch of a 'new enhanced' **Manufacturing Advisory Service (MAS)**, from January 2012. The Government will be giving MAS an additional £7 million over three years to enable it to provide companies with access to experts who work with them to identify and implement productivity and innovation improvements. BIS also plans to develop additional specialist MAS services for firms in developing markets such as offshore wind, and low-carbon cars.

7. A £75 million programme of targeted support to help smaller employers access **Advanced Level and Higher Apprenticeships**. The idea is to address the concerns of small manufacturers who can struggle to access Higher Apprenticeships under current delivery models. The funding will support businesses across supply chains to build Advanced and Higher level apprenticeship schemes, by covering some of the costs associated with setting up new training Frameworks and putting in place training arrangements with other businesses, including large companies in the supply chain. The scheme aims to help employers to create around 10,000 additional higher apprenticeships over the next four years.

8. Placing priority on the development of a new degree-equivalent **Higher Apprenticeship** to support the Advanced Manufacturing sector. This Level 5 Apprenticeship will include engineering status and will act as a route to accreditation as an engineer and professional recognition for successful apprentices on graduation.

9. The strengthening of the Government's strategy for promoting the acquisition of **STEM skills.** This strategy aims improve student awareness of STEM careers and the uptake of STEM skills. The focus for this will be on:

    - improving training for careers professionals to ensure young people have access to high-quality, independent guidance to make informed decisions about STEM subjects and careers;

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[25] *'Government boosts UK manufacturing',* BIS website News, 17th March 2011
[26] *Research boost for UK Manufacturing*, EPSRC Website News, 17th March 2011

- increasing the number of industry-school visits (e.g. by Apprenticeship Ambassadors);

- improving STEM teaching;

- strengthening STEM promotion activities, including STEMNET, which coordinates a range of activities between business and schools to raise the profile of STEM.

10. A high profile industry showcase alongside the 2012 Olympics and a roll out of a programme of '**Made in Britain' exhibitions**.

11. A new **international prize in engineering**, as prestigious as the Nobel prize, part funded via private sector endowments, the aim being to make engineering a desirable profession and inspire young people to become great engineers.

In addition to policies specifically designed to support manufacturing, there are a number of more 'generic' Coalition programmes that are of importance to the sector and which are worth examining in some detail here.

3.2 Britain Open for Business

In May 2011, two months after the Plan for Growth, the Coalition Government launched 'Britain Open for Business', which aims to promote growth through international trade and investment. The focus is on encouraging innovative and high growth SMEs to export; supporting larger companies seeking to win large-scale overseas contracts and attracting high-quality inward investment.

As part of the strategy, UK Trade & Investment (UKTI) is to be encouraged to *'develop a more entrepreneurial culture that makes better use of private sector expertise'* and to offer an enhanced bespoke service to its customers. A range of new initiatives exists, such as: regional events to raise awareness about high growth and emerging markets; creating a peer-to-peer self-help community for UK exporters; linking SMEs up with overseas venture capital; an improved Tradeshow Access Programme and so on.

The rebalancing of the economy is cited as a 'focus' for this programme, which includes plans for the introduction of: programmes of '*specialist sector-based support across a range of innovative and technology rich sectors, including advanced manufacturing, defence and security, infrastructure, healthcare and life sciences, services, technology and low carbon*[27]*.'*

3.3 Regional Growth Fund

The Regional Growth Fund (RGF) is a £1.4 billion challenge fund operating across England from 2011 to 2014. It supports projects and programmes that lever private sector investment

[27] Britain open for Business, UKTI 5 year strategy, May 2011

creating economic growth and sustainable employment. It aims particularly to help those areas and communities currently dependent on the public sector to make the transition to sustainable private sector-led growth and prosperity. The fund is open to applications from the private sector, and public/private partnerships.

To date, there have been two rounds of bids. In Round 1, 464 bids were submitted, seeking £2.8 billion. Forty-six of these were approved to receive £450 million of RGF funds. One of these was located in the HoSW LEP - a £1.2 million award for an energy centre at South Devon College, focused on promoting jobs growth in renewable technologies. In Round 2, 492 bids have been submitted asking for £3.3 billion. These are being scrutinised by central government, with the expectation that successful bidders will be informed ‘in the autumn’. It is probable that a significantly larger sum will be allocated during Round 2, depending on the quality of bids, leaving a small residual sum for a future Round 3.

3.4 Enterprise Zones

In Budget 2011, the Government announced the creation of 21 Enterprise Zones, 11 of which were to be bid for, by LEP-led consortia. Enterprise Zones are geographically defined areas set aside for the creation of new businesses and jobs.

The core Enterprise Zone ‘offer’ consists of:

- A business rate discount, worth up to £275,000 per business for five years.
- Business rates growth from the zone would be retained by the local area, to support further economic development and the growth of the zone.
- A ‘radically simplified’ planning process, for example, using Local Development Orders, which allow development without the need for planning permission from the local planning authority.
- A Government commitment to ensure superfast broadband is rolled out throughout the zone.

Additionally, Government would also consider:

- Enhanced capital allowances for plant and machinery, in a limited number of cases, where there is a strong focus on manufacturing.
- Tax Increment Financing (i.e. allowing local authorities to borrow against future increases in business rate receipts).
- UKTI support for inward investment or trade opportunities in the zone.

The HoSW LEP was very quick to respond to this opportunity, submitting two of the 29 Enterprise Zone bids received nationally. These were:

1. *Energised, Advanced, Inspired: Plymouth's Enterprise Zone for the Heart of the South West* – focused on growing renewables and advanced manufacturing within the Marine Energy Park.

2. *Heart of the South West Low Carbon Energy Enterprise Zone* – across four sites, focused on creating business clusters around: nuclear power in Somerset; solar photo-votaics around the RGF-funded Energy Centre at South Devon College; and offshore wind generation in North Devon related to the Atlantic Array.

Regrettably, neither of these bids was approved and the Government has no plans to establish a further zone. Instead, civil servants are stressing that, tax incentives aside, the bulk of competencies required to establish 'Enterprise Areas' already exist at the local level, and that the Government would be pleased to see LEPs and Local Authorities pressing ahead with their plans independently.

3.5 Further Education and skills provision

The HoSW LEP area is home to no fewer than 11 FE Colleges[28] and numerous private sector training providers which have an important role, both in supporting individual manufacturing enterprises and in supporting the strategic development of the sector as a whole.

Partnerships between colleges and businesses, such as that between Yeovil College and Augusta Westland, confer significant benefits on both parties. They provide training that is immediately relevant to business operations and needs, that is supported by wider underpinning knowledge and mapped to national standards and frameworks. These partnerships often go well beyond sector-specific and technical skills, adopting a 'whole organisation approach' that involves creating progression routes for a wide range of staff, including those in IT, business administration, sales, HR, management, logistics and other parts of the organisation.

Colleges and major training providers also have a strategic role, investing in and securing funding to deliver skills in areas that are important to local economic development. These areas can be geographical, such as Exeter College's investment in a new Devon and Exeter Technology Academy close to the new Exeter Science Park and Skypark, or they can be sector-focused, such as Plymouth College's partnership with power and automation multi-national, ABB[29], focused on refurbishing a £4 million Energy Centre and equipping it for training in the very latest low carbon technologies. The £8 million investment[30] in developing a nuclear Energy Skills Centre at Bridgewater College is another example, as is Somerset College's investment in becoming a hub within the National Skills Academy for Environmental Technologies, which clearly has an important manufacturing dimension.

In terms of provision, in 2009/10 Colleges and training providers in the HoSW LEP area recorded 4,180 learner 'Starts'[31] related to Process and Manufacturing industries and 2,920

[28] These are: Bicton college City College Plymouth, East Devon College, Exeter College, Petroc, South Devon College, Bridgwater College, Richard Huish College, Somerset College, Strode College, Yeovil College
[29] ABB has a turnover of £34billion organisation and employs about 3,000 people
[30] Provided by EDF Energy, the National Skills Academy (Nuclear), SW Regional Development Agency and the Nuclear Decommissioning authority
[31] Note that 'starts' relate to someone starting an course or a unit (if not part of a wider course). One individual may record more than one 'start' in a year. Thus this does not equate to people trained.

Starts on courses related to Science, Engineering and Manufacturing Technologies. Almost exactly 50% of these Starts were accounted for by people aged under 19.

Although this provision is large and diverse, it is interesting to note that, of 50,000 engineering-related qualifications delivered across England in 2008/9, 32,200 (64%) were NVQs in Business-Improvement Techniques and a further 13,360 (27%) were NVQs in Performing Manufacturing Operations[32].

It is perhaps also significant to note that, in 2008/09, 94% of learners undertaking General Engineering-related learning were male.

3.6 Apprenticeship Expansion

Since coming to power, the Coalition Government has repeatedly re-stated its commitment to expanding Apprenticeships. The total national budget for Apprenticeships for 2011/12 is up 88% on that set out at the start of 2011/12, during a period in which there has been a 4% cut in the overall Skills Funding Agency (SFA) budget. There are no regional or sub-regional allocations for this funding, which will pay for 50% of the technical training costs of people aged 19 and over and 100% of the training costs of 16 to 18 year olds. Employers are responsible for 'co-funding' the remaining training costs as well as fully funding Apprentice wages of at least £2.50 per hour.

The HoSW LEP wishes to make the most of this investment opportunity to work with employers and training providers in expanding the volume and range of Apprenticeships within the area. In doing this, it must be mindful of government priorities within the overall aspiration of increasing Apprenticeship numbers. These priorities are to:

- reshape Apprenticeships so that technician-level – Level 3 – becomes the level to which learners and employers aspire;
- broaden the range of Apprenticeship Frameworks that are available, enabling people to use Apprenticeships to access and progress in a wider range of occupations;
- develop Apprenticeships as a foundation for higher-level learning, including foundation degrees and other forms of HE;
- promote Apprenticeship uptake among smaller firms and in sectors where take-up has historically been low.

A desire to support the UK's manufacturing base is often cited as a driver for the emphasis on increasing the number of Advanced (technician-level) Apprenticeships and degree-equivalent Higher Level Apprenticeships.

[32] SEMTA, Sector Skills Assessment, December 2010.

3.7 Higher Education

The two Universities within the LEP area (Exeter and Plymouth) are both strongly committed to supporting manufacturing businesses. In terms of provision in Science, Technology, Engineering and Mathematics (STEM) subjects, the two universities provide around 30% of all provision in the South West - over 20,000 students in total. Since 2002/03, the number of STEM students at the two universities has risen by around 18%, a faster rate than either regionally or nationally.

Around half of all Plymouth's students and around 40% of Exeter's students were studying STEM subjects in 2009/10. While this proportion has remained fairly constant in Plymouth in recent years, the STEM agenda appears to have increased in importance in Exeter, rising from just 26% in 2002/03 up to its current level of 40.1%.

The two universities also demonstrate a continuing support for the manufacturing sector within their corporate strategies.

3.7.1 Plymouth University

Plymouth aims to become *'the enterprise university, truly business-engaging and delivering outstanding economic, social and cultural benefits'.* Through its 'Enterprise Solutions' initiative, the University offers help to businesses in areas as diverse as entrepreneurship, research, funding, knowledge transfer, recruitment, skills and training. Manufacturers such as Drew & Co, Fine Tubes Ltd and Seawind have successfully worked in partnership with the University.

Additionally, a new world-class marine facility for Plymouth will be completed in 2012. This £19 million building will house state-of-the-art research facilities including the most advanced wave tank and testing facilities in the country, positioning Plymouth as a global centre for marine energy research and innovation.

3.7.2 University of Exeter

The University of Exeter is investing £230 million in science, medicine and engineering through its Science Strategy. This will include investing £27 million in staffing and infrastructure developments, £83 million in science-related capital projects (including new buildings and refurbishment of current facilities) and raising £75 million in earned research income for research projects, students, and collaborations.

The strategy is focused around the following five themes, which form the basis for the University's investment priorities in the immediate future:

- Climate change and sustainable futures
- Systems biology
- Extrasolar planets
- Functional materials
- Translational medicine, personalised healthcare and public health.

The University has also just launched a £2.6 million facility, which aims to benefit businesses that are producing prototypes and developing new products. CALM, the Centre for Additive Layer Manufacturing, has been established to help businesses, entrepreneurs and researchers to harness the potential of ‘3D printing’, whereby complex parts and complete products are built up one layer at a time. This technique can significantly reduce the time it takes to get a product from the design stage to market and is offered at heavily subsidised rates to Small and Medium-sized Enterprises (SMEs) in Devon, Dorset, Wiltshire and Cornwall.

The University is also a key partner in the development of the Exeter Science Park, whose tenants will be supported in gaining access to both research support and students under a range of placement, knowledge transfer and internship programmes.

A list of HE assets in the ‘New Industries, New Jobs’ sectors is provided at Annex 7.

3.8 GCSE/A levels/Diplomas

GCSEs in Engineering and Manufacturing were first introduced in 2002, and sit alongside schools' core provision of Science and Mathematics GCSEs. There is also a vocational A Level in Manufacturing.

In terms of the take-up of A Levels in STEM subjects likely to be of most relevance to manufacturing employment, the recent signs are fairly positive. In the HoSW LEP area, the overall number of STEM A Level entries was up by 6.4% in the last year, compared with 1.6% for all subjects (Table 1). While there has been strong growth in Mathematics and Sciences, there has been a fall in Design and Technology and IT-related subjects.

Table 1: STEM A Level entries, Heart of the South West, 2008/09 - 2009/10

STEM subject	2009/10	% of all A Level entries	% change in entries from 2008/09
Biological Sciences	1,400	7.6%	7.7%
Chemistry	920	5.0%	10.8%
Physics	616	3.3%	3.5%
Other Science	226	1.2%	17.1%
Mathematics	1,478	8.0%	8.8%
Further Mathematics	207	1.1%	23.2%
Design and Technology	289	1.6%	-16.2%
Computer Studies	119	0.6%	-7.0%
ICT	183	1.0%	-5.7%
STEM Total	5,438	29.4%	6.4%
ALL A Levels	18,501		1.6%

Source: DfE

A central recent policy oriented towards making school provision more vocational has been the introduction of 14-19 Diplomas in 2008. Diplomas are new qualifications, designed and developed by employers, that combine work-related experience and academic studies. They aim to '*bring learning to life and show how it can be applied to the real world'.*

Diplomas are available at three levels:

- Foundation (equivalent to five GCSEs at grades D - G)
- Higher (equivalent to seven GCSEs at grades A* - C)
- Advanced (equivalent to 3.5 A Levels)

The Diploma in Engineering was among the first diplomas to be developed and one in Manufacturing & Product Design and Society (MPD) was introduced in 2009/10.

In the first year, 32 starts in Plymouth on the Engineering Diploma was the extent of manufacturing-related Diploma learning in the HoSW LEP area. In 2009/10, this had risen to 48 learners in Engineering (with activity in all parts of the LEP except Torbay), and four learners in Plymouth on the new MPD Diploma.

ANNEXES

Annex 1: HoSW LEP Board Membership

Nicholas Ames	Managing Director	Supacat Ltd.
Simon Barker	Director Strategy and Alliances UK Government Business	Agusta Westland
Frances Brennan	SW Regional Director	Working Links
Adam Chambers	Chief Executive Officer	Peninsula Enterprise
Dr Stephen Bird	Operations Director	South West Water Ltd
Nick Engert	Consultant	Clarke Willmott LLP
Tim Jones	Chartered Surveyor / Commercial Property Developer	
Vaughan Lindsay	Chief Executive	Dartington Hall Trust
Councillor Ted Fry	Deputy Leader and Portfolio Holder Economic Development	Plymouth City Council
Councillor William Mumford	Cabinet Member for Economy, Enterprise and Employment	Devon County Council
Councillor David Hall	Cabinet Member for Strategic Planning and Economic Development	Somerset County Council
Gordon Oliver	Mayor and Leader	Torbay Council
Professor Wendy Purcell	Vice-Chancellor	Plymouth University
David Allen	Registrar and Deputy Chief Executive	University of Exeter
Rachel Davies	Principal	Somerset College

Annex 2: HoSW LEP Priorities

A2.1 Job creation

- Secure growth in our key urban centres and facilitate job creation across the HoSW LEP area, ensuring that market towns and rural areas are closely linked to urban growth and also economically successful in their own right.
- Provide support to strong sectors across the area such as tourism, food and drink, and land-based industries to grow employment opportunities through improving business profitability and productivity.
- Encourage investment in potential growth sectors such as marine technologies and low carbon energy generation (notably nuclear power and renewables) that can create and sustain new private sector jobs, rebalancing our economy away from an over-reliance on the public sector. We will give specific emphasis to the marine technologies and low carbon energy sectors.
- Create the conditions for high levels of business start-ups and increase the numbers of jobs in expanding SMEs.
- Working with businesses to access international markets to grow their customer base and create additional private sector employment.

A2.2 Productivity

- Coordinate and secure improvements to infrastructure, including superfast broadband and electrification of our rail network, key road improvements and housing, which underpin the success and prosperity of our businesses and communities.
- Promote changes to the planning system in order to allow businesses to flourish and expand.
- Extend, strengthen and accelerate the transfer of knowledge and innovation from our outstanding universities and educational institutions through to businesses. Particular emphasis will be on encouraging stronger links between our knowledge base and SMEs.
- To enable businesses, and especially SMEs, to deliver higher levels of productivity by improving the economic environment in which they operate. This includes facilitating effective business mentoring mechanisms, promoting business networks, enabling access to finance and supporting skills development.
- Influence and secure UK and EU funding streams to increase our levels of productivity and deliver our priorities.

A2.3 Earnings

- Ensure our workforce is equipped with the skills that businesses need, and support the development and delivery of the right skills for our potential growth sectors.

- Achieve higher levels of earnings by improving skills and educational attainment levels, giving individuals across all our communities more choice and access to a wider range of employment opportunities.
- Improve access to HE for individuals across our area
- Attract inward private sector investment from high-growth sectors to encourage higher-paid quality jobs.
- Encourage increased levels of indigenous investment to improve the quality and pay levels of existing jobs.

Annex 3: Manufacturing in the HoSW LEP area

A3.1 Introduction

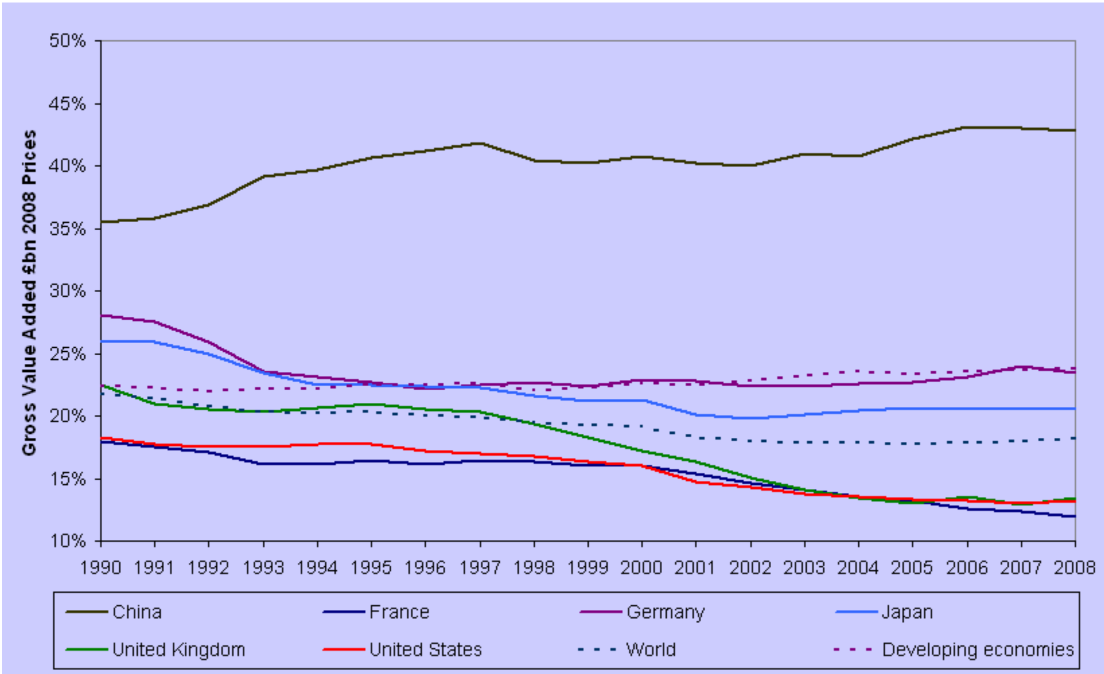
This Annex looks in some detail at the structure of the manufacturing sector in the HoSW LEP area, and the main issues affecting the sector, both in recent years and looking to the future.

A3.2 Size of the Sector

In 2009, the UK manufacturing sector generated some £140 billion in GVA. However, over the period 1990 to 2009, manufacturing's contribution to UK GDP has fallen significantly, from 22% to just over 11%. This trend is also seen in other leading industrialised nations (see below), though it has been faster in the UK than in many other countries. Reasons why manufacturing GDP has fallen include:

- Low-wage competition from emerging economies such as China, India, Russia and Brazil has resulted in mass volume production, especially in textiles and clothing, moving overseas;
- Manufacturing pricing has fallen, compared with prices in the services sector, due to increasing competition and technological progress driving down the price of manufactured goods;
- Production has moved closer to fast-growing overseas markets;
- The associated networks that supported factories (onsite catering, security, fleet management, logistical distribution etc) were originally classified as a part of manufacturing GDP. These services have been increasingly outsourced, removing elements that previously were within manufacturing GDP (source: CBI, 2010).

Figure 1: Manufacturing GVA in leading industrial countries, 1990-2009 (% of GVA)

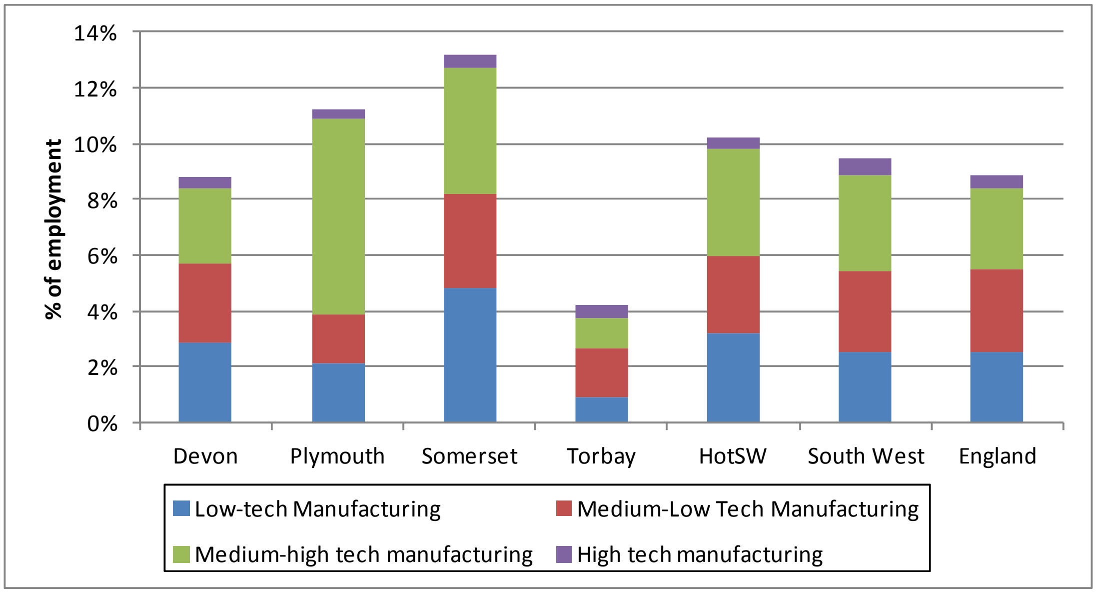


Source: UNCTAD Handbook of Statistics

In 2010, there were approximately 67,200 employees in manufacturing in the HoSW LEP area, accounting for 10.2% of total employment. This was relatively high compared with the averages for the South West (9.5%) and also Great Britain as a whole (8.8%). However, there was significant local variation between the constituent parts of the LEP, from 13.2% in Somerset, down to just 4.2% in Torbay (see Table 2).

Across the LEP, just 4.2% of manufacturing employment was in high-technology sectors (see definitions below), a relatively low concentration compared with the regional and national averages (6.3% and 5.4% respectively). However, there is a relatively high concentration of medium high-technology employment, which accounts for 33.7% of all manufacturing employment locally, compared with 30% for the South West and 27.8% for Great Britain (Figure 2)

Figure 2: Employment in high, medium and low technology manufacturing, 2010 (% of all employment)



Source: BRES

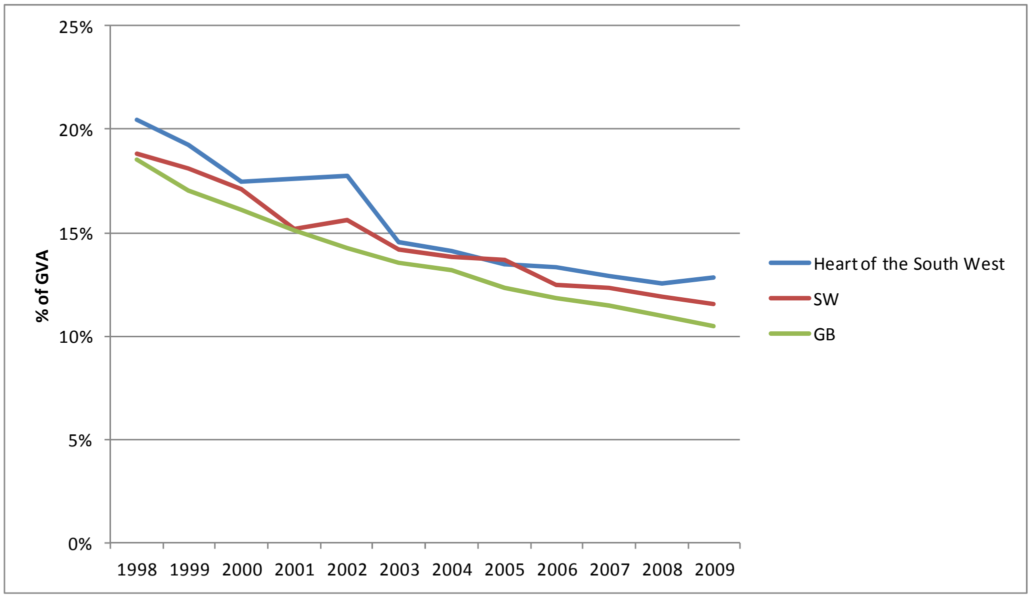
A3.3 Contribution to GVA

In 2009, manufacturing contributed around £3.1 billion to the HoSW economy, around 12.8% of total GVA[33]. As with employment, this reflects a relative concentration of manufacturing activity in the local economy, compared with the region and country as a whole.

As Figure 3 shows, the HoSW LEP area has followed the wider trend over the last 10 years, with the share of GVA generated by manufacturing declining, almost year on year, from 20.5% in 1998 to 12.8% in 2009. While this decline is clearly a concern, it is reassuring to note that the proportion of total GVA contributed by manufacturing in the HoSW LEP area has remained higher than the national or regional averages throughout this period.

33 South West Regional Accounts

Figure 3: Share of Total GVA accounted for by Manufacturing (%), 1998 - 2009



Source: South West Regional Accounts

Table 2: Manufacturing Employment, 2010

	Devon	Plymouth	Somerset	Torbay	Heart of the South West	South West	England
High - tech manufacturing	1,200	300	1,000	200	2,800	13,600	106,300
Medium high - tech manufacturing	7,000	6,800	8,800	100	22,700	64,100	567,600
Medium low - tech manufacturing	6,600	1,500	5,900	700	14,800	50,200	552,600
Low - tech manufacturing	11,700	2,600	11,800	900	27,000	85,900	773,300
Total Manufacturing	**26,500**	**11,300**	**27,500**	**2,000**	**67,200**	**213,800**	**1,999,800**
Manufacturing as % of total employment	**8.8%**	**11.2%**	**13.2%**	**4.3%**	**10.2%**	**9.5%**	**8.8%**

Source: Business Register & Employment Survey (via Nomis). Figures are rounded to the nearest 100

Table 3: Definitions of Knowledge-Intensive Manufacturing Sectors (SIC 2007)

High-tech manufacturing Pharmaceuticals Office, accounting and computing machinery Radio, TV and communications equipment Medical, precision and optical instruments	**Medium high-tech manufacturing** Aircraft Motor vehicles and other transport equipment Chemicals (excluding pharmaceuticals) Electrical machinery and equipment
Medium low-tech manufacturing Ship building / repair Printing Rubber and plastics Coke, refined petroleum products and nuclear fuel Basic metals and fabricated metal products Other non-metallic mineral products	**Low-tech manufacturing** Wood, pulp and paper products, Printing Recycling Food products, beverages and tobacco Textiles and clothing

A3.4 Productivity

Unsurprisingly, knowledge-intensive areas of manufacturing tend to be the most productive, in terms of GVA per full-time equivalent employee (FTE). The South West Regional Accounts identify (nationally) the following manufacturing sectors as being the most productive:

- Chemicals and nuclear fuel £116,400 GVA per FTE
- Food, drink and tobacco £56,100
- Electrical and medical equipment £55,000
- Manufacture of transport equipment £54,700
- Printing and publishing £53,900

Compared with the South West region, the HoSW LEP area has a relatively low proportion of manufacturing employment in these high productivity sectors (44% of employment compared with 53%).

In terms of GVA per FTE, the majority of manufacturing sub-sectors are less productive in the HoSW LEP area than across the region and Great Britain as a whole, as shown in Table 4. The exception to this general rule is Food, drink and tobacco.

Table 4: Productivity in Manufacturing, 2009

Sector	GVA per FTE (£000s)		
	Heart of the South West	**South West**	**Great Britain**
Food, drink and tobacco	56.4	51.6	56.1
Textiles, clothing, leather goods and footwear	38.3	38.4	32.7
Wood and paper products	22.6	27.2	35.5
Printing and publishing	29.8	36.4	53.9
Chemicals and nuclear fuel	71.4	77.6	116.4
Non-metal products	32.0	43.8	41.6
Metal products	27.7	29.2	36.0
Manufacture of machinery	31.9	36.4	46.2
Electrical and medical equipment	50.5	49.8	55.0
Manufacture of transport equipment	41.1	47.7	54.7
Miscellaneous manufacture	29.0	31.1	37.5
All Manufacturing	**40.2**	**43.2**	**53.1**
All sectors	**34.2**	**40.1**	**49.7**

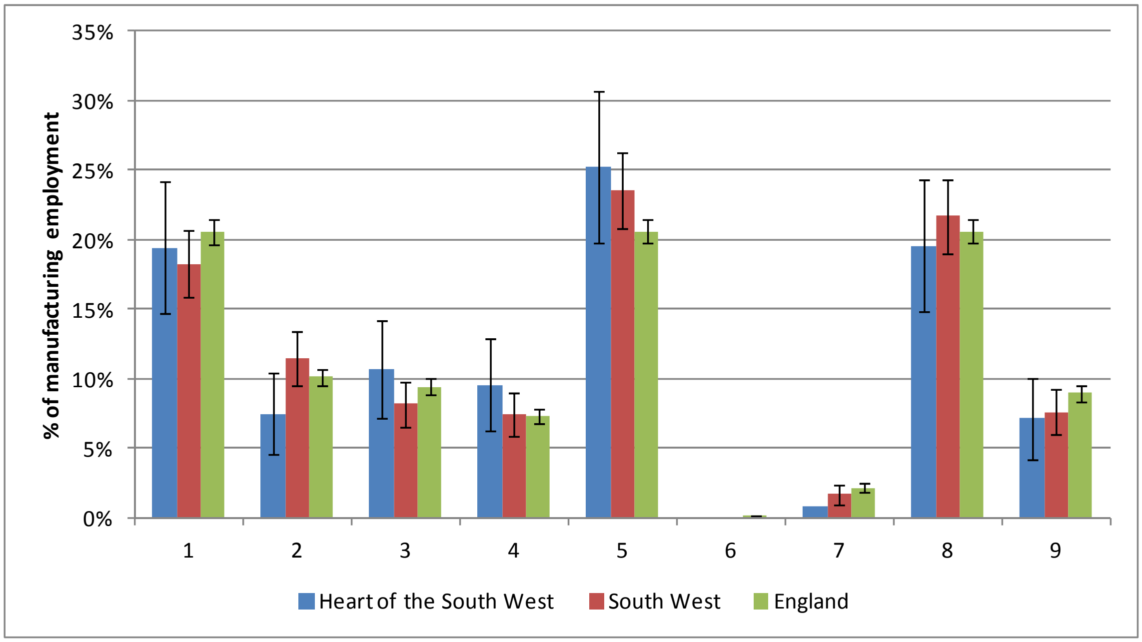
Source: South West Regional Accounts

Over recent years, productivity in manufacturing has risen significantly, by just over a third locally (34%) between 1998 and 2009, a slightly faster rate of improvement than for the South West (32%). However, this is well below the national increase of 58% in the same period.

A3.5 Occupational structure

Looking at the occupational structure of the manufacturing sector, Figure 4 suggests that the sector in the HoSW LEP area is less weighted towards higher level occupations i.e. managerial, professional and technical, and also has comparatively less fewer jobs in lower skilled occupations such as process/machine operatives and elementary occupations. There appears to be a greater concentration of employment in skilled trades locally. However, the relatively wide confidence intervals associated with the local data mean that this cannot be stated with any great degree of certainty.

Figure 4: Employment in Manufacturing by Occupation (% of manufacturing employment - with confidence intervals), April 2010 - March 2011

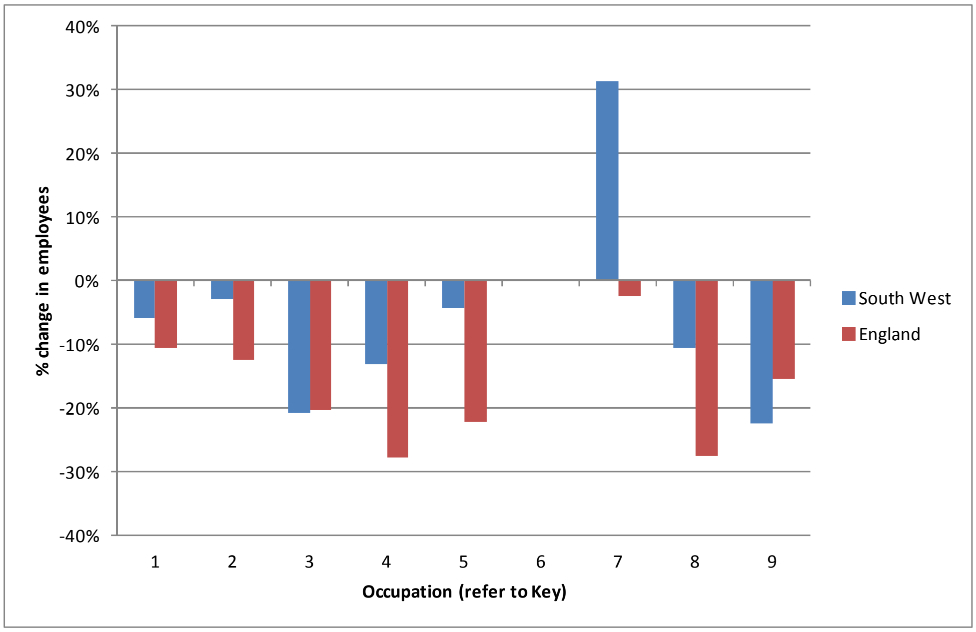


Source: Annual Population Survey - Workplace Analysis

Key
1 Managers and Senior Officials
2 Professional Occupations
3 Associate Prof & Tech Occupations
4 Administrative and Secretarial Occupations
5 Skilled Trades Occupations
6 Personal Service Occupations
7 Sales and Customer Service Occupations
8 Process, Plant and Machine Operatives
9 Elementary occupations

Over recent years, the manufacturing sector has continued to experience a structural shift in terms of its occupational make-up. Using regional and national data (which is more robust than local data), Figure 5 shows that there has been a fall in employee numbers in almost all occupations. The only increase, in sales occupations, is relatively small when looked at in terms of employee numbers, as opposed to percentage change, as shown in Figure 6..

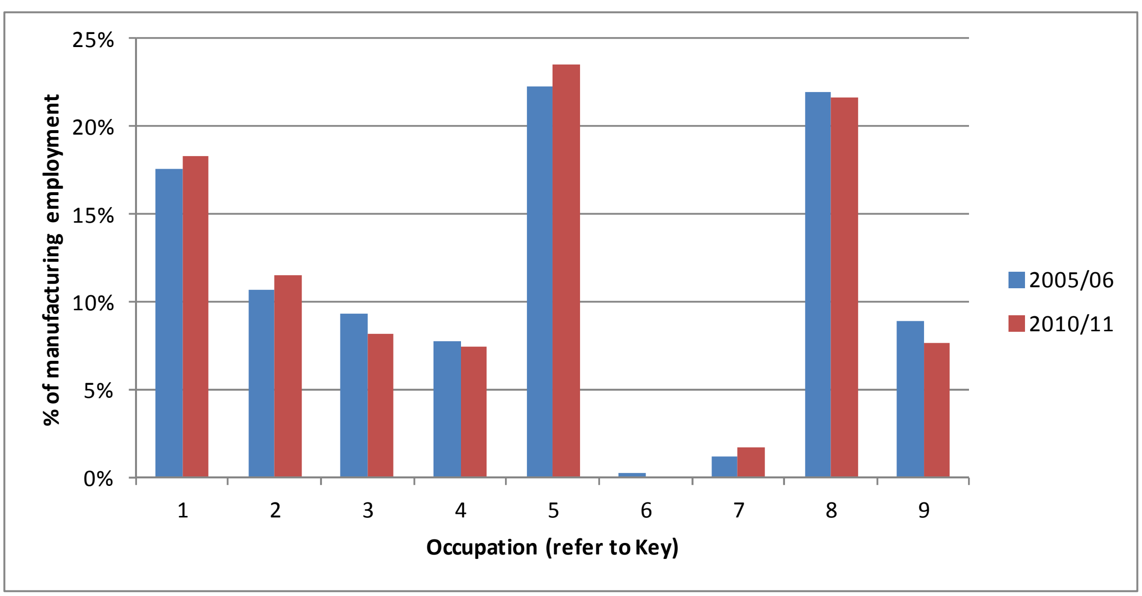
Figure 5: Change in employment by occupation (%), South West and England, 2005/06 - 2010/11



Source: Annual Population Survey - Workplace Analysis

The smaller relative declines in higher level occupations means that, while manufacturing has retracted in terms of total jobs, it has also developed a stronger concentration of jobs in higher, more knowledge intensive occupations compared to five years ago and has lost a larger proportion of its lower-level and unskilled jobs (see Figure 6).

Figure 6: Manufacturing employment by Occupation (% of employment), South West, 2005/06 and 2010/11

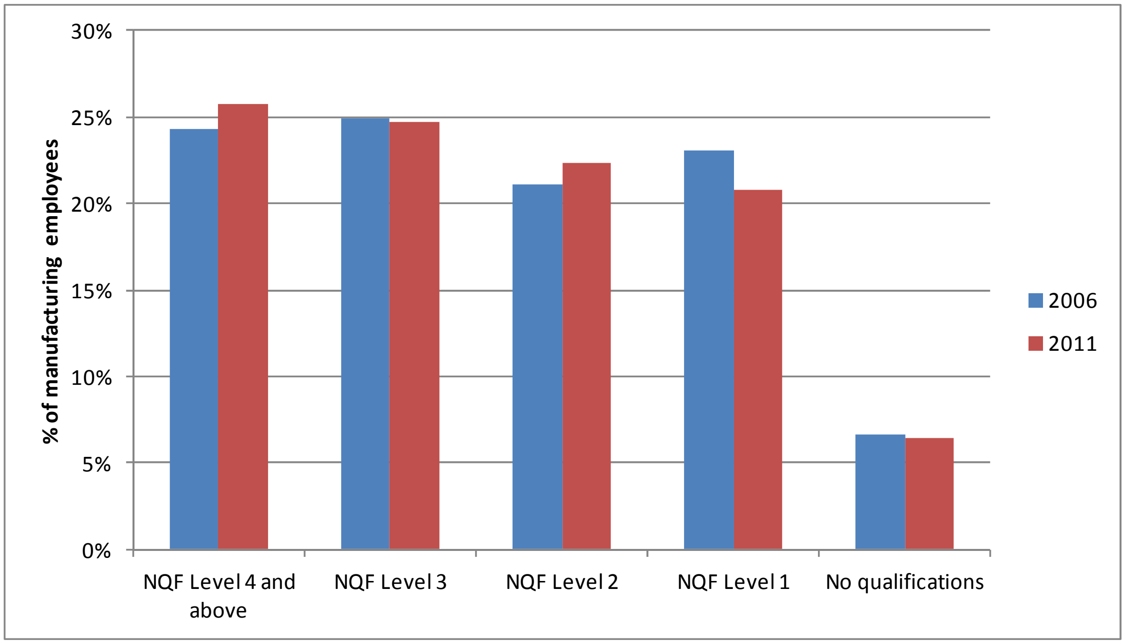


Source: Annual Population Survey - Workplace Analysis

A3.6 Skills structure

With a shift towards employment in higher-skilled occupations, we would also expect to see a corresponding shift towards higher skill levels. Using qualifications as a proxy for skills (again at regional level, due to the unreliability of local statistics), Figure 7 shows some evidence of this shift, with an increase in the proportion of manufacturing employees who are qualified to at least Level 4, while the proportion qualified to Level 1 or with no qualifications has fallen. It is likely that a longer-term analysis, looking further back into the past, would show a more dramatic shift.

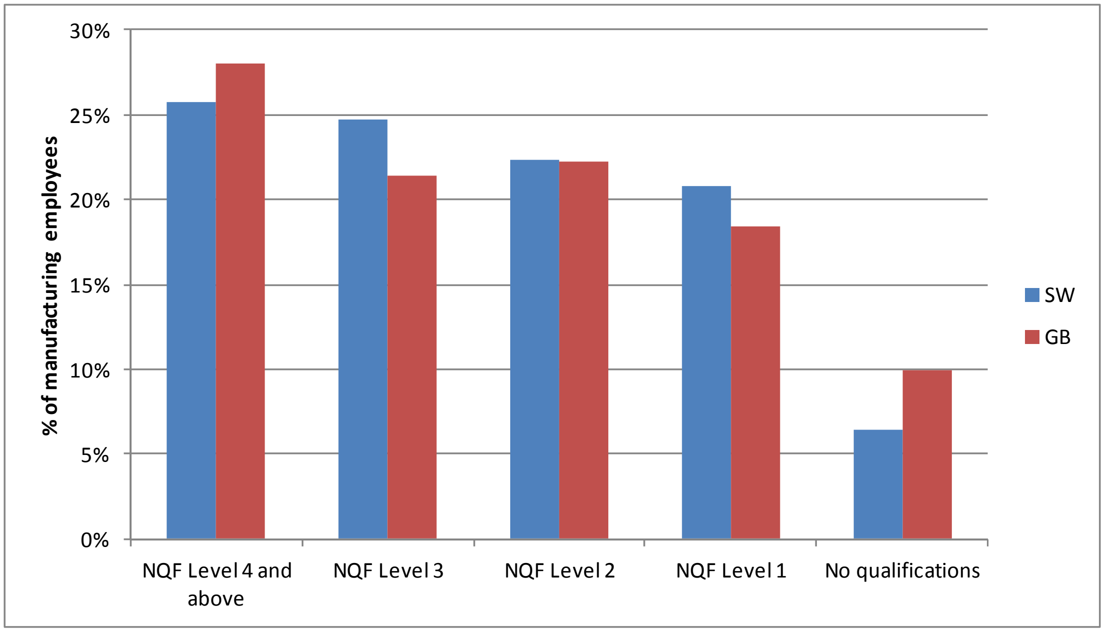
Figure 7: Manufacturing Employees by Qualification Level, South West, 2006 & 2011



Source: Labour Force Survey

Figure 8 shows that, while the manufacturing sector in the South West has a significantly lower proportion of its workforce with no qualifications compared with the national average, it also has a lower proportion of workers qualified at Level 4 and above. It has a higher proportion of workers qualified to Level 3, which might be expected given the prevalence of employment in skilled trades occupations previously identified, where Level 3 is often the required skill level.

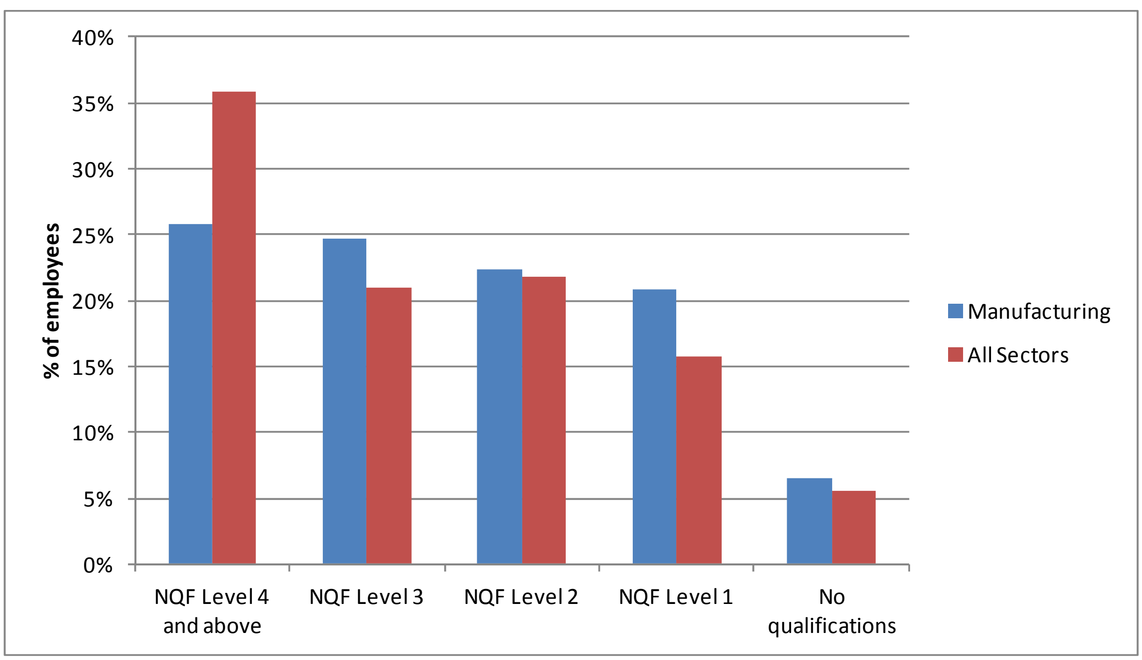
Figure 8: Manufacturing Employees by Qualification Level, South West vs GB, 2011



Source: Labour Force Survey

Finally, despite the shift towards a more highly-qualified workforce and a growing proportion of employment in the higher level occupations manufacturing still has a much lower proportion of its workforce qualified at Level 4 and above, compared with the economy as a whole. It also has a higher than average proportion of employees with the lowest levels of qualifications or with none at all.

Figure 9: Employees by Qualification Level, Manufacturing vs All Sector, South West, 2011



Source: Labour Force Survey

A3.7 Skills Issues

Findings in this section are largely derived from the NESS 2009[34].

A3.7.1 Recruitment

According to NESS 2009, 19% of all manufacturers reported having recruited 16 to 24 year olds directly from education, compared with 23% of all employers. Unsurprisingly, however, recruitment patterns were highly differentiated within the sector. For example, 75% of 'science-based industries' in the Semta footprint reported recruiting staff directly from Universities, compared with 29% of enterprises in 'mature engineering'. Conversely, 37% of enterprises in mature engineering report recruiting 16 year olds directly from school, compared with only 11% of science industries.

The proportion of manufacturing employers who felt that young people were 'poorly' or 'very poorly' prepared for work was slightly higher than the all-sector average:

- 33% of manufacturers employing 16 year old school leavers stated they were poorly prepared, compared with 29% for all industries;
- 25% employing 17 or 18 year old school or college leavers stated they were poorly prepared, compared with 29% for all industries;
- 14% employing under 24 year olds from HE stated they were poorly prepared, compared with 12% for all industries.

In general, spending longer in education was associated with greater employability. For example, 82% of employers in the Semta SSC footprint considered people aged 24 and under coming out of university to be well prepared for work, compared with 62% of 16 year olds.

Of those who had recruited 16 year olds whom they considered poorly prepared for work, the most frequent reasons were: lack of work/life experience or maturity (57% of employers); poor attitude/lack of motivation (41%); and lack of the required skills (35%). The figures for 17 or 18 year olds were very similar. For HE graduates, a difference is observed, in that larger numbers of employers (54%) reported that they lacked the required skills and competencies and fewer (40%) reported a lack of working world/life experience.

A3.7.2 Skills shortages and skills gaps

At the time of the Survey, which was in midst of the 2009 recession, 1% of manufacturing employers had at least one vacancy, compared with 1.7% of all employers. Of those with a vacancy, 22% reported this as being hard-to-fill and 18% said that it was hard-to-fill because applicants lacked the required skills for the job. This compares with 16% of all employers reporting having vacancies that were hard-to-fill due to skills shortages. While the incidence of these 'skills-shortage-vacancies' (SSVs) was slightly higher in manufacturing than in all industries, it is important to note that they only affected a very small number of jobs, around two per thousand. It is difficult to argue, therefore, that an inability to recruit people with the

[34] Unfortunately, Sector-based data from the NESS 2009 is not robust at the HoSW level.

appropriate skills is a major impediment to the industry, although the Survey was undertaken during a recession, when the labour market was relatively 'slack' and recruitment difficulties less prevalent than at times of fuller employment.

Where SSVs did occur, in manufacturing they were more likely to be in vacancies for professionals (20% of the total, compared with 13% of the total across all sectors); Skilled Trades (28% in manufacturing, compared with 14% for all sectors); and machine operatives (13%, compared with 5%).

One reason for the low number of SSVs was that employers appeared to accept that they had a responsibility for upskilling new staff and were prepared to fill vacancies with people who were not yet fully proficient to perform all the tasks required of their role. These 'skills gaps' (which occured where employers identified that they had staff who were not fully proficient in their current role) were reported by 20% of all manufacturing establishments, compared with 19% of all employers. In total, just over 200,000 manufacturing employees nationally were reported as having skills gaps, 24% of whom were employed as machine operatives (an occupation accounting for 7% of skills gaps across all sectors) and 18% of whom were employed in the skilled trades (9% in all sectors). The skills most frequently identified as missing were technical, practical and job-specific skills. Generic skills such as team-working, oral and written communication were also frequently cited by manufacturers as missing, but no more frequently than by employers in general. A larger than average number of manufacturing employers identified a shortage of numeracy, general IT and problem-solving skills.

Skills gaps most frequently occurred as a result of people lacking experience or having been recently recruited - 70% of employers with skills gaps reported this to be the case. This means that they tend to be temporary. But they can still have a significant impact on the business. The impact of skills gaps, reported by employers in the Semta SSC footprint, included an: increase in the workload for others (51% of employers); increased operating costs (37%); difficulties meeting quality standards (24%), and difficulties introducing new working practices (23%). The picture is similar for other manufacturing SSCs and, taken together, points to the considerable importance of effective recruitment, induction and initial vocational training within the industry.

One further impact of skills gaps highlighted in a recent survey[35] was that almost a third (31%) of high-tech manufacturing firms reported having recruited people from outside the UK owing to a lack of suitably-qualified people from within the UK.

A3.7.3 Up-skilling existing staff

There were significant differences in the extent to which employers in different sectors believed that their staff would need to acquire new skills and knowledge over the next 12 months. In general, public sector employers were significantly more likely to anticipate a need to upskill than others. Across all sectors, 69% of employers anticipated a need to

[35] National Survey of UK High Tech Manufacturing, General Electric, February 2011

upskill employees, compared with 64% in the Semta and Cogent sectors, 61% in Proskills, 59% in Improve and only 53% in the Skillsfast UK sector.

Across the manufacturing SSCs, there was some variation in the reasons given for the need to acquire new skills and knowledge. A general point, however, is that it is perhaps surprising that an industry so exposed to international competitive pressure, in which ‘new product development’ and the introduction of ‘new technologies or equipment’ are frequent, tends to be less inclined to cite these as reasons for up-skilling than many other sectors.

Table 5: Reasons why employers expected employees would need to acquire new skills or knowledge in the next 12 months. Manufacturing SSCs.

	New legistlative / regulatory requirements	New Products or services	New technologies or equipment	New working practices	Increased competitive pressure	Any need identified
	%	%	%	%	%	%
All Sectors	47	44	42	42	35	69
Cogent	42	38	41	41	36	61
Proskills	30	34	40	30	33	61
Improve	37	33	33	37	30	59
Skillfast	27	31	30	28	29	53
Semta	37	38	42	34	33	64

Source: NESS09

Supplementary analysis does, however, suggest that a firm’s product market strategy has a significant influence, with 73% of organisations operating a ‘very high quality’ product market strategy anticipating a need to train, compared with 55% of those operating a ‘very low quality’ strategy. Unsurprisingly, organisations pursuing the high quality strategy cited the development of new products and services as a driver for training (52% cited this) nearly twice as frequently as those pursuing ‘low quality strategies’ (27%).

Across all sectors, Managers were most frequently identified as the single occupational group where the need to upskill was greatest. This may partly reflect the prevalence of managers across organisations. However, the extent of the margin (e.g. in Semta SSC footprint, 33% cited Managers, 22% cited Skilled trades and 10% cited Machine operatives), does suggest a recognition of the significance and value of managerial skills.

A3.7.4 Propensity to train

60% of Manufacturers reported having trained staff in the last 12 months, compared with 68% of all enterprises. The fact that larger organisations were much more likely to have trained a member of staff than smaller ones does, however, mean that this figure must be treated with caution – it may be as reflective of the average size of enterprises in manufacturing as their propensity to train.

However, when asked how many staff they had provided training for in the last 12 months, manufacturers reported one of the lowest proportions of staff being trained (44%), a figure significantly below that seen in the public sector (e.g. 73% for Health & Social work). Per capita expenditure on training (£1,200 per employee) in manufacturing was also significantly below the all-sector average (£1,700).

An area where the sector performs well, however, is in the provision of Apprenticeships, which are offered by 7.6% of manufacturing employers. The sector as a whole accounts for 13% of all Apprenticeships nationally, while accounting for around 10% of total employment.

A3.8 Skills for future growth

HM Treasury and BIS' recent *Plan for Growth* argues that *'access to a skilled workforce, particularly science, technology, engineering and maths (STEM) skills, is vital for the sector'*.

And that:

> *Poor or inaccurate information about the characteristics of modern manufacturing can dampen investment and deter young people from studying STEM-related subjects or from seeking a job in the sector. In 2008-09, nearly 43 per cent of first degree graduates from UK Higher Education Institutes (HEIs) were in STEM-related subjects. However, of these graduates, less than 5 per cent entered employment in the manufacturing sector, despite average wages in engineering comparing favourably to other professions.*[36]

A recent research report backs this up, suggesting that nearly a quarter of UK engineering graduates are working in non-graduate jobs or unskilled work such as waiting and shop work[37]. The findings suggested that less than half (about 46%) of 2009 engineering graduates were in jobs directly related to their degree subject six months after leaving university.

While Higher Apprenticeships may provide a good alternative to full-time HE for young people who want to develop a career through on-the-job training, some firms do not invest in apprenticeships because they are not perceived to be relevant or suited to the work of the company. The 2010 UKCES Employers Perspectives Survey reported that 33% of interviewed firms shared this perception, suggesting that there remains significant work to be done in terms of raising employer awareness of the content and quality of these new qualifications and pathways into the industry.

The data cited above also pointed to a need for HE policies that generate close links to manufacturing businesses, both to improve graduate employability and enable more to progress into employment that is directly relevant to their studies within the local economy. The University of Exeter already operates an 'Employability and Graduate Development' programme, which includes summer internships for undergraduates. It offers Student Business Partnerships, which give students the chance to gain constructive paid work experience within well-respected businesses. And it promotes Graduate Business

[36] HM Treasury and BIS (2011) **The Plan for Growth**, March 2011
[37] BBC, 2011

Partnerships, a scheme which places graduates with host organisations to work on specific projects for up to a year (at the end of which more than 70% of graduates are retained by their host organisations, either on a permanent or extended contract).

There is also the Plymouth Graduate Internship Programme (PGIP), which creates short-term paid internships for recent graduates of any UK university or FE college.

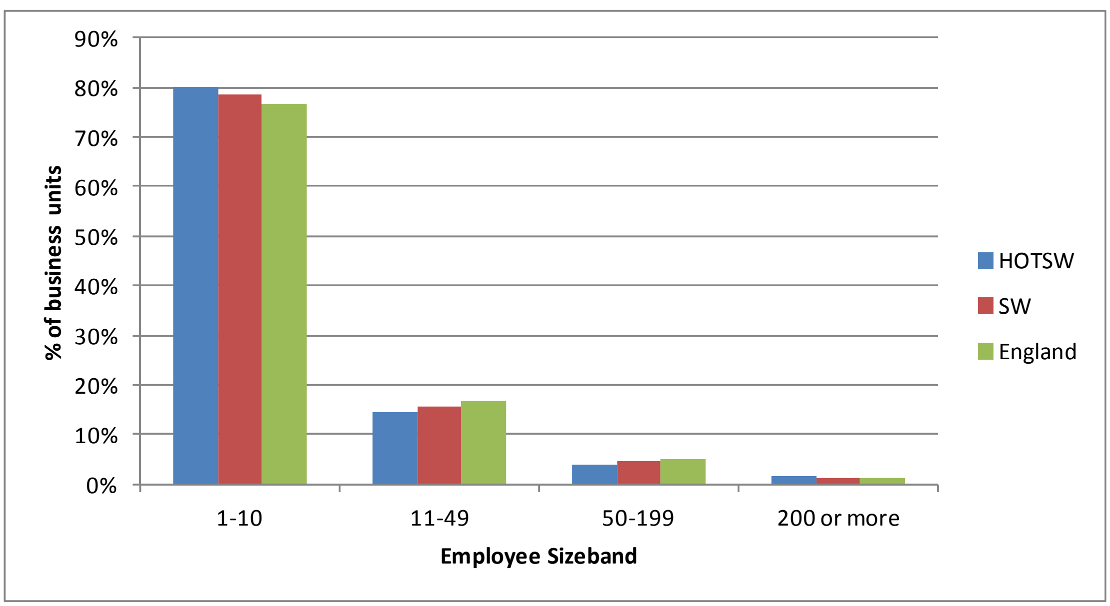
Both institutions offer Knowledge Transfer Partnerships (KTPs), one of the largest graduate recruitment programmes in the UK, employing around 1,000 graduates at any one time. These combine knowledge and expertise from an academic institution along with the appointment of a recently qualified graduate or postgraduate who works on a jointly supervised project within a local business, involving activities such as improving existing products, developing new products, or implementing new systems and frameworks to improve efficiency.

A3.9 Size of manufacturing employers

In analysing the structure of the manufacturing industry, it is also worth noting that manufacturing businesses in the HoSW LEP area tend to be smaller than those found across England as a whole. Figure 10 shows that in 2008 (the most up-to-date figures available for sizeband analysis), 80% of manufacturing businesses employed 1-10 people, a higher proportion than seen regionally or nationally, while there a lower proportion of local manufacturing businesses were to be found in the 11-49 and 50-199 sizebands.

Within the 1-10 sizeband, the vast majority (65% of all manufacturers in the HoSW LEP area) employed fewer than five people. Again, this was significantly higher than the national average of 61%.

Figure 10: Manufacturing Businesses by Sizeband, 2008



Source: Annual Business Inquiry 2008 - Workplace Analysis

A3.10 Trends in Manufacturing

This section examines trends in manufacturing employment, looking back at the impact of the recent recession and at the longer-term trend over the last decade or so.

On a methodological note, the change in 2008 from the 2003 Standard Industrial Classification (SIC) to the 2007 SIC led to a revision of the way manufacturing activities were classified. In practical terms, this means that comparative analysis going back past 2008 at a sub-sector level is only possible by a grouping of SIC activities that are a reasonable match across the two versions of the SIC. Therefore, we have grouped manufacturing into the following:

High-tech manufacturing - Pharmaceuticals, Office, accounting and computing machinery, Radio, TV and communications equipment, Medical, precision and optical instruments.

Medium high-tech manufacturing - Aircraft, Motor vehicles and other transport equipment, Chemicals (excluding pharmaceuticals) Electrical machinery and equipment.

Medium low-tech manufacturing - Ship building/repair, Printing, Rubber and plastics, Coke, refined petroleum products and nuclear fuel, Basic metals and fabricated metal products, Other non-metallic mineral products.

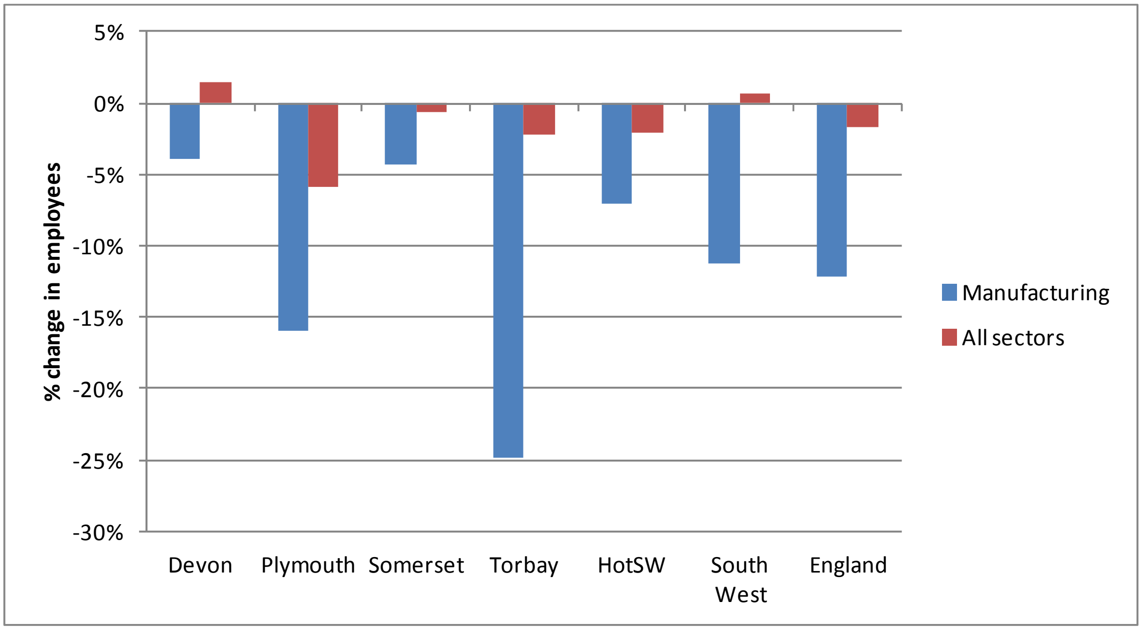
Low-tech manufacturing - Wood, pulp and paper products, Printing, Recycling, Food products, beverages and tobacco, Textiles and clothing.

A3.10.1 The impact of recession

According to the South West Regional Accounts, between 2007 and 2009 there was a 4.6% drop in the amount of GVA generated by the manufacturing sector in the HoSW LEP area, a fall of around £149 million. This was higher than the fall experienced across the economy as a whole (4.2%), but was lower than the drop in manufacturing regionally (8.9%) and nationally (6%).

In terms of employment change, compared with pre-recession levels, Figure 11 shows that the manufacturing sector has clearly suffered disproportionately relative to the economy as a whole. Employment in the sector dropped by 7.1% between 2007 and 2010 in the HoSW LEP area (representing a loss of around 5,100 jobs), while the employment decline across all sectors was just 2.1%. Overall, the area did not fare as badly as many others. 11.2% of manufacturing jobs were lost across the South West and 12.1% were lost nationally. However, within the LEP area, there were significant variations, with Torbay and Plymouth experiencing a more severe decline than the national average (25% and 16% respectively).

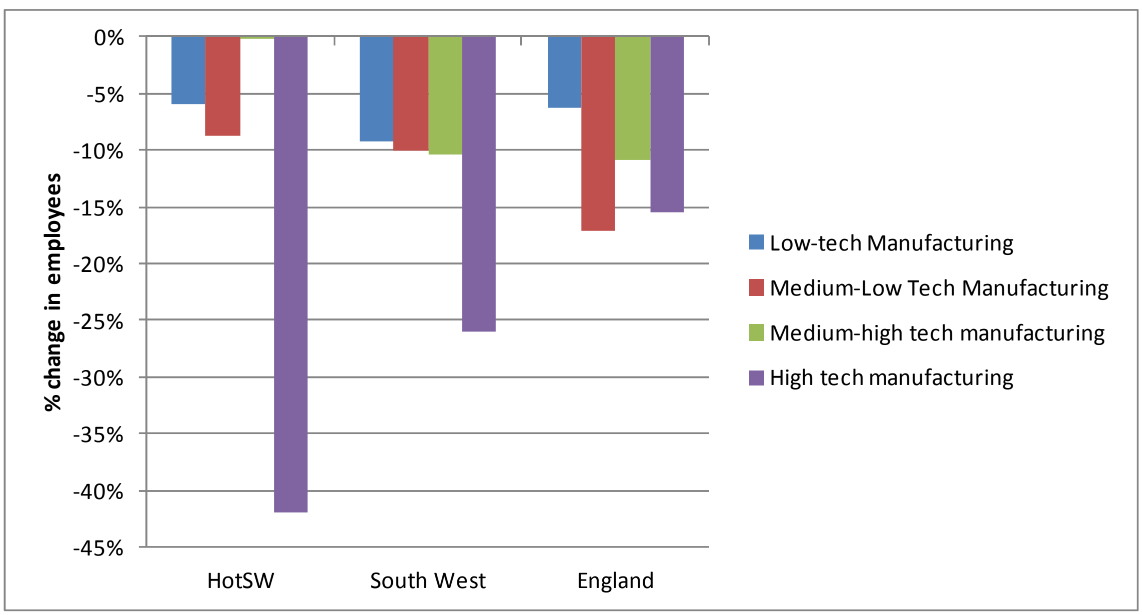
Figure 11: Employment Change, 2007-2010, Manufacturing vs all sectors



Source: ABI and BRES

At a slightly more detailed industrial level, Figure 12 shows that in the South West - and in the HoSW LEP area in particular - the most severe falls in employment have been in high-tech manufacturing, where over 40% of jobs (around 2,000 jobs) have been lost in the last three years. While the number of jobs in medium high-tech manufacturing have held their own, there have also been significant job losses (more in line with the regional and national trends) in medium-low (1,800 8.8% of the total) and low-tech manufacturing (1,300, 5.9% of jobs).

Figure 12: Employment Change, 2007-2010, Manufacturing sub-sectors

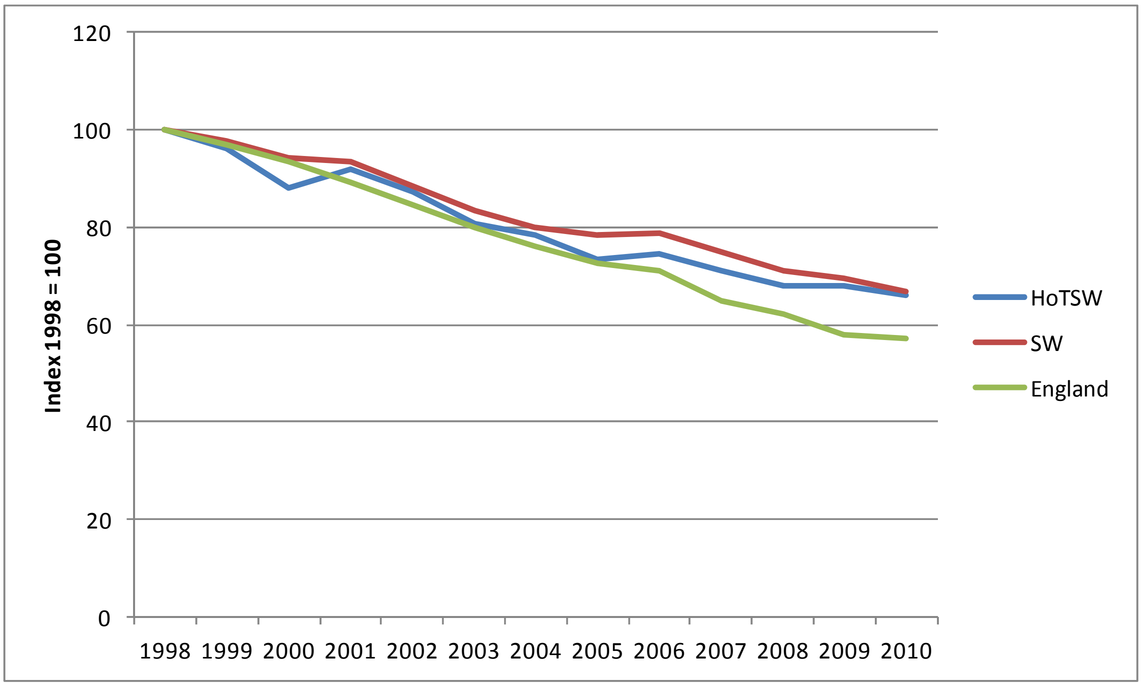


Source: ABI and BRES

A3.10.2 Longer-term trends

Although the recession was clearly a tough time for the entire economy, for the manufacturing sector it did not seem to affect significantly the longer-term trend of declining employment in the sector. Figure 13 shows that there has been virtually year-on-year falling employment in the sector from 1998 to 2010. In 2010, employment in the HoSW LEP area was just two-thirds of its 1998 level (similar to regionally), representing a loss of around 35,000 jobs, while across England as a whole, the decline was even more severe with over 40% of jobs lost in the same period.

Figure 13: Falling Employment Levels in Manufacturing, 1998 - 2010 (Index, 1998 = 100)

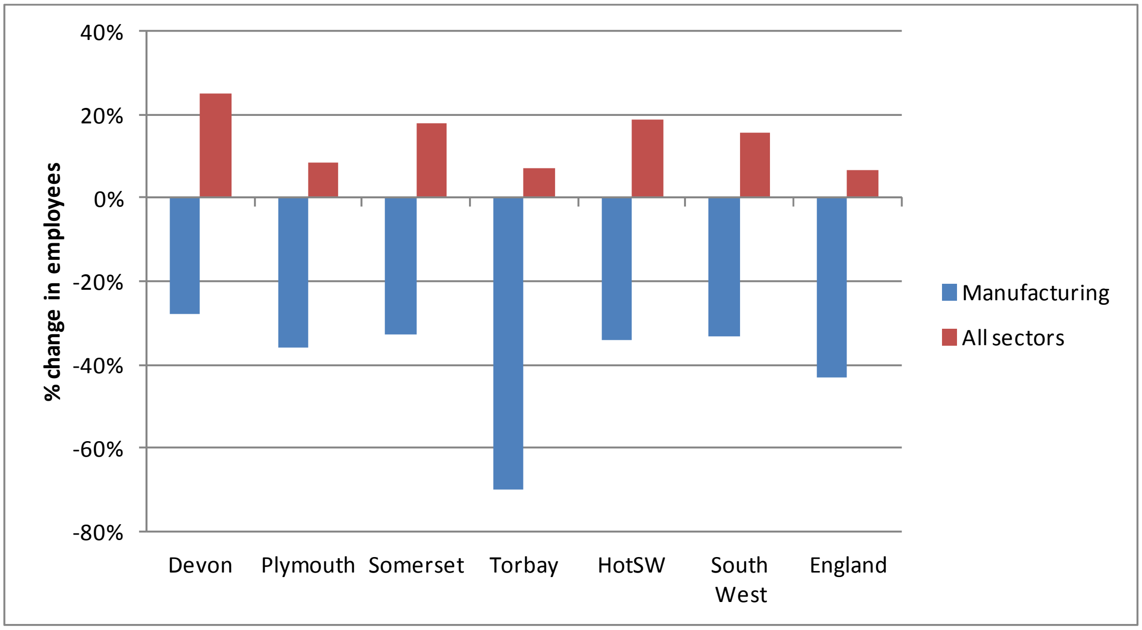


Source: ABI and BRES

This dramatic decline compares unfavourably with the economy as a whole. Figure 14 shows that there has been significant employment growth in the overall economy, with over 103,000 jobs created in the same period.

The number of jobs rose by over 20% in Devon, with more modest increases in Plymouth and Torbay. It also shows that the decline in manufacturing was particularly severe in Torbay, which lost 70% of its manufacturing employment between 1998 and 2010.

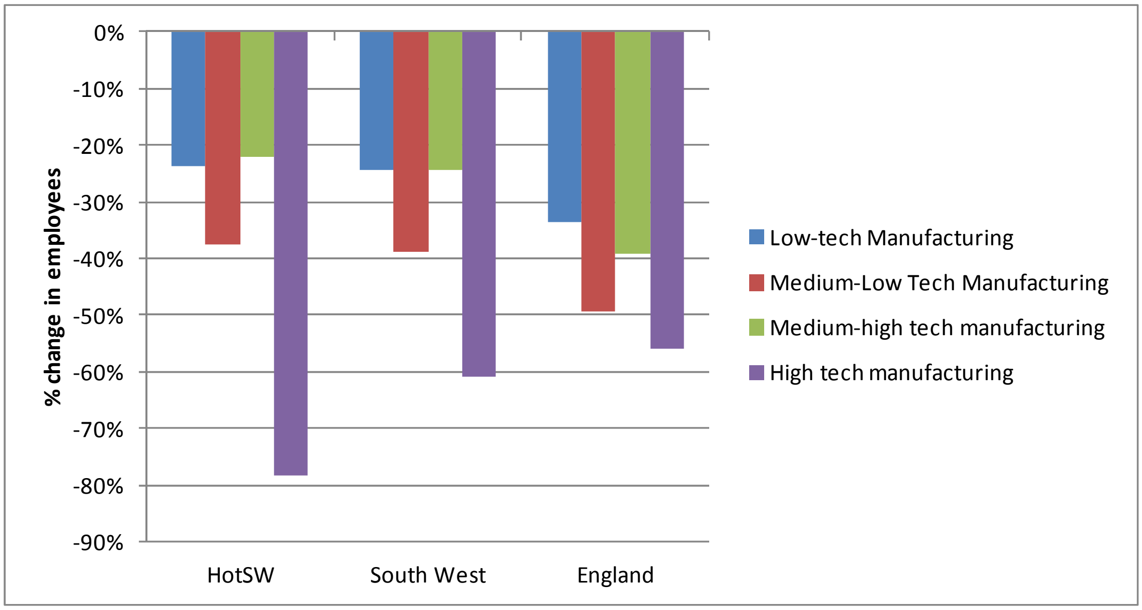
Figure 14: Employment Change, 1998-2010, Manufacturing vs all sectors



Source: ABI and BRES

Perhaps of most concern, however, is the extent of the decline in high-tech manufacturing in the HoSW LEP area as shown in Figure 15 . Between 1998 and 2010, employment in the high-tech sector was decimated across the LEP area, falling by almost 80%, a loss of 10,000 jobs. While jobs in the high-tech sub-sector have also been lost fastest at the regional and national level, the extent of the decline has not been as severe as that seen locally. Looking at this data in some detail, this seems to have been driven by a number of bad years for high-tech manufacturing, notably in the year to 1999, then 2002, 2003, 2005 and 2009. At a detailed industry level, the worst of the impact has been in electronics-related activities. The biggest individual fall was in 2002, which affected Torbay the most, which suffered the closure of Nortel around that time, one of the area's major employers.

Figure 15: Employment Change, 1998-2010, Manufacturing sub-sectors



Source: ABI and BRES

A3.11 Future trends

The analysis above presents a fairly bleak picture over the last decade or so, with falling employment and a declining share of GVA. Nevertheless, manufacturing remains a vitally important sector of the economy, especially so in the HoSW LEP area, where it makes up a higher than average share of GVA and employment. So after such a difficult period, what is the outlook for manufacturing?

A3.11.1 Key drivers of change

Analysis by BERR in 2008 (now BIS), highlighted the ongoing importance of five global dynamics. Most important has been the growth in the extent and complexity of **global value chains**; developments in ICT have facilitated new trade in services and made it easier for firms to source a larger proportion of inputs from across the globe. Firms are responding to increasing global competition through greater product differentiation, placing a premium on firms' implementation of **technology**, investment in **intangibles**, such as design, branding and R&D, including ICT, and investment in **people and skills**. In addition, new opportunities and challenges are being created for manufacturers by the growing importance of the **low carbon economy**. These dynamics are likely to remain key to the future growth of the sector.

HM Treasury's *Plan for Growth* points to the fact that the sector is *'dependent on its ability to design and make high value products'* while, at the same time, investment in new capital has become increasingly expensive. Modern machinery and the proliferation of new technologies and software are contributing to shorter and shorter investment cycles, to the point where the EEF now suggests that manufacturers are replacing their machinery and equipment, on average, every seven to eight years.

However, the costs of demonstrating and testing new technologies can be very high, particularly for SMEs. According to the 2009 UK Innovation survey, around 15% to 20% of firms in the UK manufacturing sector cited either a lack of information on technology or markets as a barrier to innovation, while the UK lags behind a number of other countries in terms of adoption of new technological processes. In 2008, the number of robots in use per 10,000 people was around 23, a figure significantly lower than that for Germany (around 124) and Sweden (around 103).

A3.11.2 Global growth

Another important factor affecting the future competitiveness of UK manufacturing is that it is increasingly facing stronger competition from the emerging economies, in particular Brazil, Russia, India and China, which are increasingly developing productive capabilities in higher value manufacturing and activities where the UK has traditionally enjoyed a competitive advantage (BIS, 2010).

On the more positive side, growth in emerging markets is likely to create substantial export opportunities for UK manufacturers, as growth in the middle and professional classes brings about increased demand for more expensive and better-quality manufactured goods

Official trade data shows that the value of UK manufactured exports to emerging markets has risen in recent years. This growth is forecast to continue, with the World Bank predicting that Gross Domestic Product in developing countries will more than triple by 2050 and PwC forecasting that by 2050 the ‘E7’ economies (comprising the BRIC countries together with Indonesia, Mexico and Turkey) could be around 25% larger than the current G7[38] economies.

A3.11.3 Local growth/projections

In terms of a more local outlook, the latest South West Economic Projections from the Economy Module of the South West Observatory states that:

> *the marked reversal in manufacturing output growth between the first and second quarters of 2011 and the unexpectedly weak trade data are of particular concern, given the widespread hope for an export-led recovery. Overall, the balance of growth has swung from the production and construction sectors, which generally enjoyed robust growth during much of last year but have slowed sharply or contracted since then, to services, which have generally enjoyed marginally stronger growth this year than last.*

The forecasts expect employment growth across all sectors within the HoSW LEP area to be weak during 2011 and 2012 – with total FTE employment projected to decline by around 0.7% this year (or by around 4,900 FTE jobs) with a further decline expected during 2012 (around 3,200 FTE jobs). However, reflecting some continued optimism about the projects for manufacturing-led recovery, the manufacturing sector is forecast to recover strongly in 2012, with a 7.3% increase in FTE (around 5,000 jobs) and a 4.8% rise in GVA.

[38] G7: Canada, France, Germany, Italy, Japan, UK and US.

In the medium-term, manufacturing in the HoSW LEP area is expected to perform:

- slightly better than manufacturing at regional and national level, with an average annual growth of 2.3% in GVA and 1.5% in FTE jobs between 2011 and 2016 (Table 6).
- slightly worse than all sectors within the HoSW LEP area.

Table 6: Projections for the Manufacturing Sector, 2010 - 2016, GVA and FTE (average annual % change)

	Heart of the South West		South West		UK	
	Manuf	**All sectors**	**Manuf**	**All sectors**	**Manuf**	**All sectors**
2010-2011						
Change in GVA	2.2	1.4	3.1	1.4	2.6	1.3
Change in FTE	-2.6	-0.7	-1.9	-0.7	-1.4	-0.5
2011-12						
Change in GVA	4.8	2.1	3.7	2.1	3.3	2.0
Change in FTE	7.3	-0.5	7.1	-0.4	6.0	-1.0
2011-2016						
Change in GVA	2.3	2.4	2.1	2.5	1.6	2.4
Change in FTE	1.5	1.6	1.4	1.7	0.9	1.2

Source: South West Economic Projections, Autumn 2011. FTE = full-time equivalents

Another short-term outlook, this time from the CBI's monthly Industrial Trends Survey, states that *'UK manufacturers predict that production will continue to grow over the next three months, despite order book levels slackening during September'*. Of 470 manufacturers responding to the CBI's latest survey, 22% described total orders as above normal, and 31% said they were below. The resulting rounded balance of -9% indicates order book levels slipped back in September, though this measure remains well above its long-term average (-18%).

The same CBI survey also highlighted the acute inflationary pressures facing the industry and warned that higher prices were likely to be passed on to customers over coming months. UK firms are being affected by dearer commodity prices and the rising cost of imported goods, which has lead to almost one third of manufacturers planning to raise factory gate prices over the next three months.

A3.11.4 Skills issues identified by SSCs

Looking specifically at skills issues, the four SSCs that cover different areas of manufacturing each undertakes a Sector Skills Assessment (SSA). Together, these provide a detailed picture of the sector's skills needs in the future.

Semta, the SSC for science, engineering and manufacturing technologies, identified the following key drivers of skills change:

- The introduction of new technologies or equipment.
- New legislative or regulatory requirements.

- Development of new products and services.
- Introduction of new working practices.
- Increased competitive pressure.

The changing qualifications profile of Semta's workforce is evidence of an increasing demand for higher-level skills, and there is expected to be a net requirement for more than 136,000 people with intermediate and higher-level qualifications (NVQ Level 3 or higher) over the period 2010 to 2016.

Proskills, the SSC for process manufacturing, picked out the following as being the key drivers that will affect skills demand over the next decade:

- Tough economic conditions, pushing companies to reduce costs, improve performance and find new markets, locally, nationally, and internationally.
- Increasing regulation, particularly in low carbon and environmental areas, which will require new operating systems, equipment, and ways of working.
- Health and Safety, which will remain a priority across the sector.
- Improved processes and operating systems to reduce costs and improve productivity.
- More sophisticated customer demands and relationships, including new business models involving complex supply chains and greater numbers of customer-facing activities.
- New products, which will require high-level STEM skills for research and development, new skills to take the products to market, and new knowledge to set up the production processes.
- Changes in employment laws, with more complex rights and responsibilities, requiring managers to operate in a more complex and sophisticated environment.

There changes are identified as requiring:

1) a move to higher-level skills;

2) more complex skill profiles;

3) flexible qualifications which can ensure that workers have the appropriate competences

4) more sophisticated management practices, and

5) imaginative ways of organising training provision to address the new skill needs, and fit in with complex operating systems.

Cogent, which covers bioscience, chemicals and polymer industries, identified that the greatest net requirement for labour will be in occupations related to science or engineering.

Accounting for expansion demand, occupational mobility and replacement demand, Cogent forecasted that around 120,000 new personnel in science or engineering-related occupations would be required nationally by 2017.

Although there is a general decline in employment in the traditional sectors, growth in Nuclear (new build) and Bioscience (across Chemicals, Pharmaceuticals, Oil & Gas and Polymers) will either replace or displace traditional technologies.

Improve, the SSC for food manufacturing, has identified its sub-sector as having been the most resilient area of manufacturing during the recent recession. The future for the sector is seen as being dependent on its ability to adapt to a number of complex drivers, including globalisation, regulation and technology/innovation. These drivers present the industry with a number of skills issues, which may have a negative impact on it if not addressed. According to research by Improve, the skills priorities, to ensure future competitiveness of the industry, are:

- Food Scientists and Technologists (FST) with higher-level skills (including food nutritionists and food health scientists etc);
- Engineers with higher-level skills who have the ability to adapt and learn about bespoke machinery required for complex automated systems across the industry;
- Skilled trades and specialist craft skills at intermediate level (e.g. butchery, bakery, meat processing);
- High-quality managers and supervisors with higher-level and intermediate skills (depending on their position) across all sectors and all sizes of businesses, who will lead the adoption of new manufacturing and processing techniques e.g. lean manufacturing, Radio Frequency Identification (RFID), High Pressure Processing (HPP) and who can drive competitiveness and create a world-class sector.

Annex 5: Coalition Government measures to support UK growth

Access to finance

- Reform to the Enterprise Investment Scheme and Venture Capital Trusts (subject to State Aid approval).
- An increase in the rate of EIS income tax relief from 20% to 30% from 6 April 2011.
- An increase in the size of company that can be invested in, and the amount that can be invested.

Competition

- Reform and invigorate the UK's competition framework and publication of Shaping Competitive Markets to support procurement choices that encourage competition.
- Publication of a binding set of principles of economic regulation.
- Set out the vision for consumer empowerment, to help support consumers in making better choices.

Corporate Governance

- Government will scrap unnecessary audit rules for small businesses and press the European Commission to reduce the burden of mandatory audits for medium sized businesses.
- Government will also put forward legislation to exempt many subsidiaries from producing audited accounts and continue to encourage the Commission to provide more flexibility in how the smallest companies prepare and file accounts.

Low Carbon

- To encourage investment in low-carbon power, the Government will introduce a carbon price floor for electricity generation from 1 April 2013.
- Government will scrap the unnecessary plans for a new Carbon Capture and Storage levy.
- Government will support the infrastructure development needed to enable the transition to a green economy through the Green Investment Bank.

Planning

- Localising choice about the use of previously developed land, removing nationally imposed brown field targets.
- Introduction of new land auctions; consulting on proposals to make it easier to convert commercial premises to residential and conducting an urgent review of the use class orders.

- Introduction of 21 new Enterprise Zones across England.

Regulation

- An extensive public thematic review to reduce the existing stock of regulation starting on 7th April.
- Develop a new strategy for pushing the EU to regulate less, including urging the three EU institutions to ensure that new burdens on business are offset by savings elsewhere.

Trade and inward investment

- The strategy, 'Britain Open for Business: Growth Through International Trade and Investment', sets out major new initiatives to help more SMEs to export and help larger companies seeking to win major overseas contracts. It also sets out new programmes for attracting much needed inward investment.
- UKTI will develop a more entrepreneurial culture that makes better use of private sector expertise. Alongside this, UKTI will provide an enhanced bespoke service to existing investors and potential inward investors.
- Commitment to work with banks to ensure a successful implementation of three new exporter products for bond support, export working capital, and foreign exchange credit.

Pathway 1: Targeting innovative and high growth SMEs

- Develop new SME outreach partnerships with business organisations, business schools, foreign diaspora business networks and major businesses.
- Create online peer-to-peer self-help community for UK exporters. Pilot with technology companies from late 2011 and roll out more broadly in 2012.
- Partnership with the Export Credits Guarantee Department (ECGD) to promote an expanded range of capital and credit insurance products.
- Linking SMEs up with overseas venture capital. New programme to be launched in autumn 2011.
- Improved Tradeshow Access Programme, delivered in partnership with Trade Associations. From spring 2012.
- Business service for defence and security SMEs, including an interactive web presence.
- Programmes of high impact UK regional events to raise awareness about high growth and emerging markets. Commencing autumn 2011.
- Free business mentoring for companies taking their first steps into new markets, through a global network of advocates for Britain (Catalyst UK), from autumn 2011.

- Prize for first time SME exporters, to be judged by a panel of “dragons”, aimed at recognising excellence and inspiring other companies to export for growth.

Pathway 2: Bringing high value opportunities home

- High Value Opportunities programme offering intensive support for larger companies seeking overseas contracts ranging from £250 million to more than £1 billion, with supply chain opportunities for SMEs.

Pathway 3: A pipeline of high quality inward investment

- Enhanced bespoke service for foreign direct investors, including tailored business propositions, to create a pipeline of high quality inward investment projects.
- Portfolio of large scale UK infrastructure and regeneration projects to be marketed to overseas institutional investors in partnership with Infrastructure UK.
- Regional support services for inward investors in England delivered by an incentivised private sector partner.
- New “fast-track” services for less R&D intensive investment projects.

Summer 2011.

Pathway 4: Building strategic relationships

- Key account management of the most significant inward investors and the UK’s top exporters, through a new crossgovernment Strategic Relations Unit.

From summer 2011.

Underpinning the four pathways

Seizing global opportunities

- Systematic deployment of resources to the new priority high growth and emerging markets of Asia, Latin America, the Gulf and Russia.
- Intensified use of government-to-government relations to overcome barriers to trade with priority markets, in partnership with UK business organisations. From autumn 2011.
- Establish ASEAN-UK Business Council and work to establish other partnerships for the Middle East, North Africa and Latin America. Scoping work has commenced.

Annex 6: EPSRC Centres for Innovative Manufacturing

The new EPSRC Centres for Innovative Manufacturing are part of a novel approach to maximise the impact of innovative research for the UK, supporting existing industries, and, more importantly, opening up new industries and markets in growth areas.

Each centre will receive five years' funding to retain staff, develop collaborations, carry out feasibility studies, and support up to two research projects. There is a clear business need for each centre and EPSRC support will be used as a platform from which the centres can secure further investment from industry and other funders.

The nine new EPSRC Centres for Innovative Manufacturing are:

EPSRC Centre for Innovative Manufacturing in Ultra Precision will create ultra high precision manufacturing tools that can make products with nanoscale precision. Led by Cranfield University, the EPSRC grant value will total £5.2 million, with an additional £1.2 million from industry partners.

EPSRC Centre for Innovative Manufacturing in Industrial Sustainability will rapidly reduce the resource and energy-intensity of the production of existing goods, and investigate options for a radical redesign of the industrial system. Led by Cranfield University, the Grant will total £4.5 million, with an additional £1.3 million from industry partners.

EPSRC Centre for Innovative Manufacturing in Through-life Engineering Services will design high-value systems such as aircraft engines that require less engineering service, and incur less whole-life cost. Led by Cranfield University, the grant will total £4.8 million, with an additional £3.5 million from industry partners.

EPSRC Centre for Innovative Manufacturing in Composites will develop the next generation of composite manufacturing processes based on low-cost, short cycle times, efficiency and sustainability. Led by University of Nottingham, the grant will total £4.9 million, with an additional £1.8 million from industry partners.

EPSRC Centre for Innovative Manufacturing in Intelligent Automation will capture and advance human skills and develop automated processes. Led by Loughborough University, the grant will total £4.8 million, with an additional £334,000 from industry partners.

EPSRC Centre for Innovative Manufacturing in Additive Manufacturing will combine multi-material, multifunctional devices with amalgamated electrical, optical and structural properties in a single manufacturing process using additive manufacturing. Led by Loughborough University, the grant will total £4.9 million, with an additional £3.2 million from industry partners.

EPSRC Centre for Innovative Manufacturing in Continuous Manufacturing and Crystallisation will take forward the move from batch manufacturing to fully continuous manufacturing processes for high-value chemical products. This will lead to higher levels of quality, lower cost and more sustainable production. Led by the University of Strathclyde, the grant will total £4.9 million, with an additional £1.8 million from industry partners.

EPSRC Centre for Innovative Manufacturing in Advanced Metrology will create and developing a ‘factory on the machine' linking measurement and production to minimise cost and allow ever-increasing complexity and quality in manufacturing. Led by the University of Huddersfield, the grant will total £4 million, with an additional £3.2 million from industry partners.

EPSRC Centre for Innovative Manufacturing in Emergent Macromolecular Therapies will create the capabilities by which UK companies will be able to select drug candidates for clinical trials on the basis of clinical efficacy manufacturing feasibility, resulting in greatly reduced costs. Led by University College London, the grant will total £4.9 million, with an additional £3.9 million from industry partners.

Annex 7: New Industries/New Jobs assets in the HoSW LEP area

Digital Technologies: Plymouth University has expertise in security technology.

Life sciences: An important centre of translational medicine exists at the Peninsula National Institute for Health Research Facility in Exeter, added to which is a presence in generic pharmaceutical manufacturing.

Advanced Manufacturing - industrial biotechnology: Plymouth Marine Laboratory has wide-ranging research strengths in all aspects of the marine environment, including marine biotechnology. Plymouth Marine Sciences Partnership is engaged in the development of marine feedstocks.

Advanced Manufacturing: micro and nanotechnology: Research into elements of micro and nanotechnology takes place at Plymouth University.

Additive Manufacturing: The Advanced Technologies Institute at the School of Engineering, Computing and Mathematics at the University of Exeter has a number of additive manufacturing research activities. These include industry-led research and development projects focused on the development of, and maturing, emerging platform technology for industry readiness. The research is predominantly focused on aerospace with collaborative projects with Airbus and its supply chain.

Low Carbon Buildings: Institutes for low carbon building technologies and micro-generation based in the South West include the Environment and Sustainability Institute (University of Exeter). In addition, Plymouth University is involved in nuclear new-build, while the National Skills Academy for Nuclear in the South West is based at Bridgwater College.

Low Carbon - Wind Power: the HoSW LEP area has the opportunity to capitalise on opportunities relating to the Atlantic Array, a 1.5GW wind farm in the Bristol Channel. Leading research centres include the Met Office in Exeter with their wind resources modelling capacity and the PriMARE research institutes with their Environmental Impact Assessment (EIA) expertise for offshore wind sites.

Low Carbon – Marine Energy: The Wave Hub in Hayle, Cornwall, will be the world's first large-scale wave energy farm generating up to 50MW of renewable energy and enabling wave energy companies in the UK to have a clear commercialisation pathway. The Coastal Engineering Research Group at Plymouth University and the Peninsula Research Institute for Marine Energy (PRIMaRE), an initiative between the Universit of Exeter and Plymouth University, are both involved in this initiative.

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